OCTOBER, 1958

Industrial FINISHING

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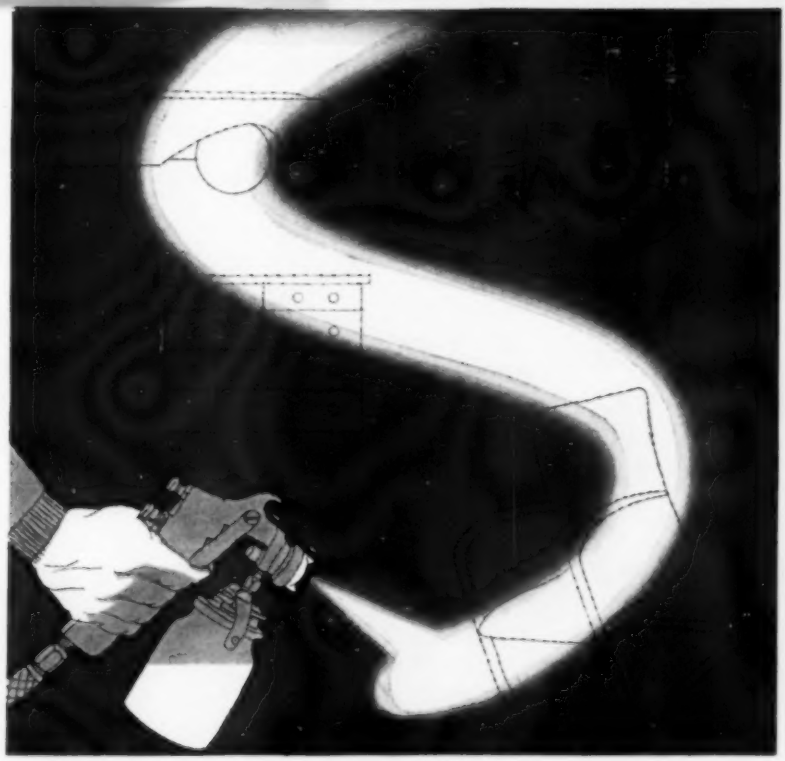

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October, 1958
Vol. XXXIV, No. 12

BPA

A monthly magazine for company executives, production superintendents, process engineers, chemists, purchasing agents, paint shop and finishing department foremen of industrial plants where product surface cleaning and painting are major operations in the manufacture of parts and products of all kinds.

Industrial FINISHING

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Accepted as Controlled Circulation Publication at Indianapolis, Indiana

34 THIRTY-FOURTH YEAR OF PUBLICATION

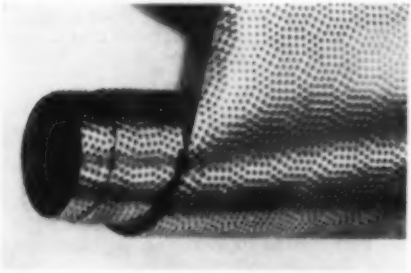
Random Comment

Machinery Sales Chart. Economists are watching each sales-chart jiggle in the machinery industry because that is the place where the first signs of any new upsurge in capital spending are expected to appear. To get a line on how the sales curve will go, Business Week surveyed dozens of machinery companies early in September and found that "mounting orders have changed glumness to a temperate optimism, often supported by the hard facts of increased orders.

"Of the five major groups of the industry, the makers of pumps and compressors are leading the upward turn. Behind them come the makers of motors and generators, of mining machinery and of machine tools. In last place, oil field equipment.

* * *

Dragon Skin for Sanding. The availability for industrial use of Dragon-Skin, new flexible all-steel sandpaper, is announced by Red Devil Tools, Union, N. J.



Has 150 punched holes per square inch.

Provided in rolls 4¼-in. wide and up to 1600-ft. in length, Dragon-Skin is produced by punching .036-in. diameter holes, 150 per square inch, in sheets of steel .004-in. thick.

The punching process produces a 5-sided burr in a uniform wave pattern. Each side simulates a wood scraper blade, providing a total of 750 cutting sides per square inch. The cutting edges are so tiny that the scrapings they produce are indistinguishable from ordinary sanding or saw dust.

* * *

Fiber Glass Insulation. A new "self-insulating," easily-installed aluminum siding with a factory-attached fiber glass insulation blanket has been developed for use on new and existing homes.

The siding, called "Rexalum Imperial," consists of a contour face aluminum clapboard to which is laminated a thick fiber glass conduction insulation blanket—equivalent to a 1-in. thick insulation board—and a coated aluminum reflective insulation sheet.

* * *

Walnut Furniture. A reunion of two all-American favorites, Early American styling and American walnut wood, made fashion news at the summer furniture markets in Chicago and Grand Rapids, Mich. Handsome groupings will be seen this fall in furniture show rooms throughout the nation. [*Continued on page 7*]

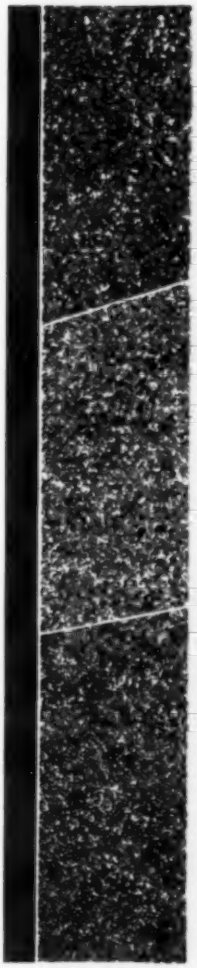
Dolan's SPEX multicolor ONE COAT FINISH

Spray **two, three** or **more** harmonizing or contrasting colors in a **single** application.

Use on wood, Masonite, concrete, wallboard, brick, plaster, paper, metal or almost any surface.

Air dry two hours or force dry 20 mins. One coat produces a **complete,** durable, **outstandingly attractive,** washable, mar resistant finish for **interior** or **exterior** use.

(**SPEX** rust-inhibiting primers are recommended for most metals.)



Suggested Uses . . .

- Radios
- TV'S
- Pianos
- Organs
- Toys
- Chairs
- Bicycles
- Display Cases
- Bookcases
- Black Boards
- Filing Cabinets
- Factories
- Bathrooms
- Trucks
- Radiator Covers
- Porch Furniture
- Boats
- Clocks
- Lamps
- Cameras
- Tool Box
- Pin-ball Games
- Woodwork
- Offices
- Kitchen Furniture
- Refrigerators
- Heavy Machinery
- Office appliances

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[*Continued from page 4*]

According to style records, native walnut was one of the woods widely used by Colonial craftsmen. In recent years walnut has been more closely identified with modern and classical interpretations than with Early American. The return of walnut to traditional American styles, market observers report, coincides with a resurgence in popularity of those themes.—A.W.M.A.

* * *

Water-Based Paints. The use of water-based paints for auto bodies and house exteriors is among the results expected from research now in progress, writes a Battelle Memorial Institute scientist in the September issue of the Battelle Technical Review. Also likely, according to Ernest R. Mueller of the Columbus, Ohio, research center, is the development of clear varnish thinned with water and a solvent. Such varnish will be used for furniture and woodwork.

One large automobile maker is already using a water-thinned primer for auto bodies, writes Mueller; and in four-year outdoor weather exposures, experimental water-based house paints have given "excellent service." Research on water-based paints is progressing toward five major developments: rain resistance; satisfactory adhesion; inhibition of the rusting of iron and steel by water-content coatings; formulation of gloss decorator enamels; and development of a hard, mar-proof baking enamel. When these objectives are met, wide new areas for these paints will be opened.

Ask About

GRAINING

with plates or cylinder machines

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Production Wood Graining

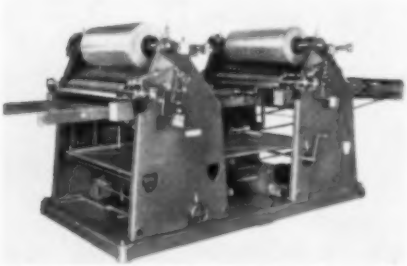
Suggestions and recommendations on the adjustment, operation and maintenance of modern grain printing machines to produce perfect reproductions of natural wood grain continuously and economically.

By Fredrick Simmons

MODERN SUBSTITUTION of grain-printed plain plywoods, hardboard and sheet metal for the more attractive but more expensive naturally grained veneers, has lead to the extensive use of graining machines.

Phenomenal success is achieved with all flat surfaces of case gods, as in today's modern designs. Combinations of color and grain pattern are practically unlimited. Even leather effects and marble variations are used.

In large TV cabinet plants, mechanical graining has reached high quality perfection levels, and has certainly proved to be a boon to the furniture trade. Indeed, one prominent TV manufacturer extols the fact that he is using hardwood in his cabinet construction, which is nothing less than ½-in. plywood with a gum-face grained or printed in the desired color. He is telling the truth. However, in lower priced buying, the public is enjoying the illusion of very select and expensive veneers, rather than "painted hardboard" and metal.



This is a 2-tone horizontal-roll graining machine which prints an undertone of modular rays on cross-figure pattern to reproduce natural wood grain. Photograph, courtesy of Hamant Tool Company.

Graining Process is Simple; Operation Easy to Learn

It is comparatively simple to install a graining system, and the ease in which production can be started and continued is based on fundamentals which are not very difficult for today's case goods manufacturer. One merely has to call in one of the many graining equipment companies, express a desire as to the type of machine best suited for one's production, and select the grain pattern. Consult your existing finishing material supplier as to base coats and primers; if he does not make or supply graining ink, there are many companies that do make the ink as well as supply the graining cylinders.

Skilled grainers are definitely not a prime requisite. Many plants have been able to teach their help to operate this equipment with the aid of the equipment men. However, I do not wish to convey the impresion that all of this medium is simplification itself. Much research is required on the part of the finishing superintendent to set standards and hold them where color and consistency are required. Also, controls on viscosity of primers, base coats and inks are very necessary.

Gelatin Rollers Must be Handled Carefully

The locality and the atmospheric conditions enter into mechanical graining. Gelatin transfer rollers are rather delicate in their composition; most of them are water soluble. Many mishaps can occur that will damage them in production. These rollers should be kept under constant temperature control. Many companies keep their gelatin rollers in a cabinet in which a temperature of 70° F. is maintained until they are required for production. [Editor's Note: In some cases these rollers are kept turning slowly by power, so that no "sag" will develop on one side while they are not in use.]

Gelatin transfer rollers are often damaged by careless handling of the doctor blade. If the blade should have a burr on its edge, a cut will appear on the roller. Transfer rollers may be renewed by sending them back to the original supplier, who melts and recasts the gelatin to its original form.

We had a rather amusing incident occur in one plant, although

This view shows a walnut grain pattern being printed on a TV cabinet. Walnut cylinder is in contact with transfer roller, with doctor blades and springs. Photograph courtesy of Shelton Graining Supplies, Inc.

it serves as a warning as to how much care one has to exercise with rollers made of gelatin. Many pock marks were appearing on the surface of the roller, which subsequently showed in the print. After extensive study, it was found that the operator was perspiring and frequently flicked the sweat from his brow onto the rollers. This moisture caused the pock marks.

Cold or chill conditions will harden your gelatin transfer roller, with the result that good graining will become more difficult if not impossible. It will cause slippage in the print, with an obvious blur. It is sometimes a good idea to install lamps some distance from the rollers to give off enough heat to maintain a temperature of close to 70°.

Etched Graining Cylinders Need Protection From Damage

Those photo-etched cylinders are the most valuable part of your graining machine; they should be treated with respect and care; pro-

tect them from damage and clean them from time to time. It is not our intent to dwell on the complicated and delicate process by which etched cylinders are made, but rather to point up the importance of their maintenance and the best way of handling them.

Graining cylinders are chrome plated to add to their longevity or endurance. The chrome will become worn in time, and one must be alert to ascertain when this occurs; otherwise it may pass unnoticed. Eventually the wear will attack the base copper, causing obliteration of the pore structure of the etch. The following solution of acid, when applied to the chrome surface, will brighten the copper so that it can be readily distinguished from the rest of the cylinder. Mix together the following: ½-gallon of water, 1-lb. of salt, and 2-oz. of 28% acetic acid.

Graining cylinders are washed in caustic soda frequently to remove caked ink from the etching. I recommend using a brass brush to clean out the pores. Needless to say, the utmost care should be exercised in handling the cylinder; damage can occur in the grain pattern that will show in the printing. Of course, this damage can be repaired; usually a dent can be soldered and retooled. Things to watch out for that could damage your cylinder are as follows: Belt buckles, pens, key rings and buttons on work clothes. These items will scratch if the cylinder is held against the body. Also, watch out for doctor blades tilted at a dangerous angle.

Many refinements are in evidence

A small machine for "edge graining" and printing narrow pieces. Photograph courtesy of Roto Finishing Systems.

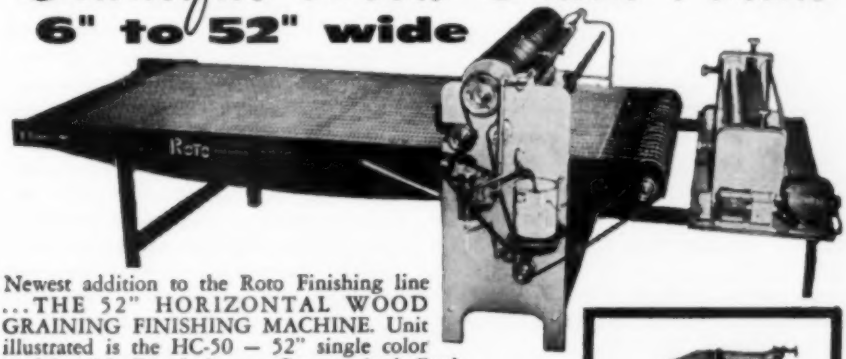
on modern graining machines. One such improvement is the turrent type apparatus which can accomomodate several cylinders of different grain patterns. Obviously, this is a great advantage where many short runs of colors are required. A quick change-over from one pattern to the next is simplified by merely tripping a latch and revolving the turret, which incidentally, is under tension against the transfer roller. Several ink systems are required here; separate pumps on each system eliminate the immediate job of washing out old color ink from the supply line last in use.

Doctor Blades; Their Use, Sharpening and Adjustment

In mechanical graining, the way to prevent repeat printing is done with the use of doctor blades, set

Beautiful Wood Grain Finish

6" to 52" wide



Newest addition to the Roto Finishing line ...THE 52" HORIZONTAL WOOD GRAINING FINISHING MACHINE. Unit illustrated is the HC-50 – 52" single color model, with Revolutionary Conveyorized Feed and Varnish roller coating attachment. Like the well known HV and previous H models, the HC-50 is also available in models that print two or more colors simultaneously.

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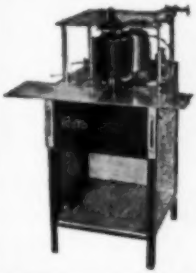
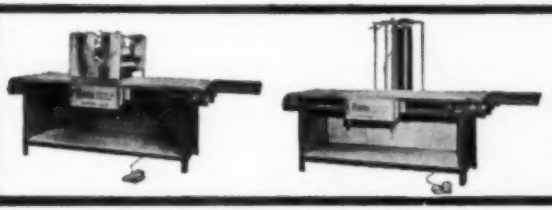


ROTO EB-6

The Roto Vertical Edgebander, EB-6, is ideal for small parts. Use along with any larger graining unit; Available with right or left hand drive, when attached to conveyorized system. The horizontal EB-6 is ideal for small table manufacturers using plastic tops. Features a continuous feed belt that prints high speed graining.



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in the grainer in such a way that the cylinder engraving is cleaned of ink each time around. The same thing occurs on the transfer roller. The blade operates on a cam, moving up and down constantly (on an upright roll machine) while the machine is in operation. Adjustment of the blades must be done to keep them under proper tension. They must also be sharpened frequently. Some operators prefer to hone the blades square, but a greater number sharpen them on a 45° angle. The writer is in this majority. Better control can be maintained with a chisel-type edge.

Doctor blades are usually made from ¾ to 1-in. spring steel and are mounted in a holder. Small coil springs hold them at the right tension against the roller and cylinder.

Ink Pumps; Power Drive; Fine Mesh Strainer

Ink is pumped through a system of hoses to supply the required amount for proper printing. Several types of pumps have been used successfully. The pump is usually belted from the motor, or reduction gear box, as the case may be. However, a complicated pump is not necessary. Only enough pressure is required to lift the ink above the cylinder, whether it be vertical or horizontal equipment.

An adequate fine mesh strainer should be installed in the ink line to catch any foreign matter, which is so often the cause of shut-downs. In this respect I would like to mention that due to the static attraction caused by the motion of the doctor blade against the etched cylinder, one should watch out for steelwool, or dust of any type, being drawn into the ink system. Then, of course, it must be blown out with air pressure. Ink pumps must be packed frequently with proper material, in order to prevent air from leaking into the ink system; this would cause bubbling and a dry cylinder.

Viscosity must be maintained according to the ink maker's recommendations. This is a must, if constant production has to be maintained. Do not guess that your ink may or may not need more thinner; check it with a viscosity cup, and consider the temperature of the ink at the time of the checking.

Graining cylinders will run dry when the weather is hot and dry. Watch that ink viscosity! The flow of ink is subject to evaporation of solvents. A draft in the immediate vicinity of your graining equipment is another condition to watch.

Graining Machine Selection; Things to Think About

The selection of equipment for production graining should be predetermined at length. There are many reputable manufacturers in the United States, but caution should be your watchword, as in the selection and purchase of any other costly equipment. The experience of the writer has been to lean to the less complicated machine. Select a machine that is simple enough to do your job, yet with enough "beef" (weight) for endurance, although the two are not necessarily synonymous.

Your product may require jigs to allow for appurtenances like hardware or mouldings. However,

try to avoid this if possible. The ideal way to grain, when using a vertical roll machine, is to lay your item on the flat level steel table of the machine, place the edge of the item against the transfer roller manually, and apply enough pressure to complete the sweep across surface.

Some equipment has a conveyor belt on the work table; the speed of the belt is synchronized with the revolutions per minute of the printing roller. With this set-up the operator places the case on the belt and as the belt moves, the work makes contact with the roller. This is a good system to use for heavy case goods.

When your part or product needs edge graining, it is possible to purchase an edge graining machine that has narrow rollers and cylinders made for this purpose. It is merely a small grainer. However, some plants have the station time to grain edges on the large machine.

There are machines made to print 48-in. panels, with a printing surface on the cylinders of 54-in. Some of our large plywood and hardboard manufacturers are using this type of equipment with success.. Speeds in excess of 60-ft. per minute are quite common on these large operations which turn out beautiful wood grained panels for the trailer and building trade. Many U. S. concerns are considering or adopting high speed graining in conjunction with roller coating for true automation. It is possible to make wood graining, with a prior coating of the surface, fully automatic, using service personnel only. This helps to bring labor costs down to a minimum. Of course, this can be attained only with extensive engineering, and only on flat stock.

Good Surface Preparation Before Grain Printing

Needless to say, your final printed finish will be only as good as your surface preparation. Primers and base coat should be prepared for spraying or roller coating according to your supplier's recommendations. Viscosity control is vitally important. Air pressure at the gun and on the material container should be standardized and held within close limits. Sanding dust must always be tacked-off with a tack cloth before the next coat.

Some kinds of patented-board require extra care in preparation because of the waffle-like peculiarities of these surfaces. Heavy primers are sometimes required. Transfer rollers refuse to print into these minute indentations, causing fish-eye effects. Naturally the surface to be grained must be smooth and "level" to print perfectly.

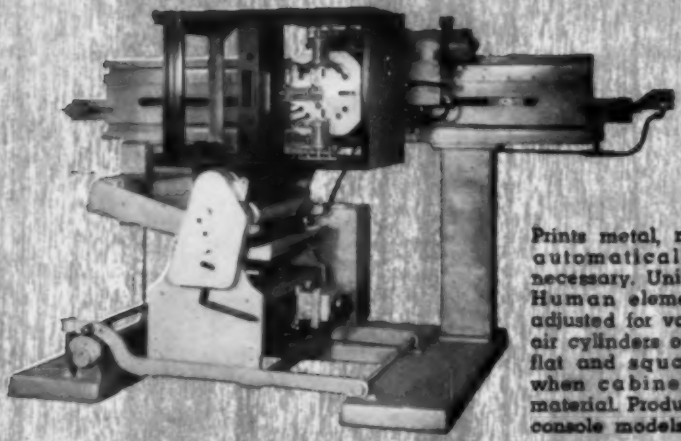
Some Graining Troubles and What Causes Them

Ink Drying on Cylinder.

Look for an increase in the viscosity of the ink; or restricted ink volume due to dirt in the system; or the pump belt may be slipping.

Blurred Print

Look for loose set screws in rollers. The transfer roller may be too cold. Gloss content of base coat may be too great. The operator may be working too fast for the speed of roller. You may have a dull doctor blade. [*Cont'd on page 16*]



Prints metal, masonite or wood cabinets automatically. No jigs, no fixtures necessary. Uniform printing, no misprints. Human element eliminated. Quickly adjusted for various sizes. Cabinet held by air cylinders on inside, assuring a perfect, flat and square printing surface even when cabinets are made of thinnest material. Production-2 per minute on large, console models.

Wood

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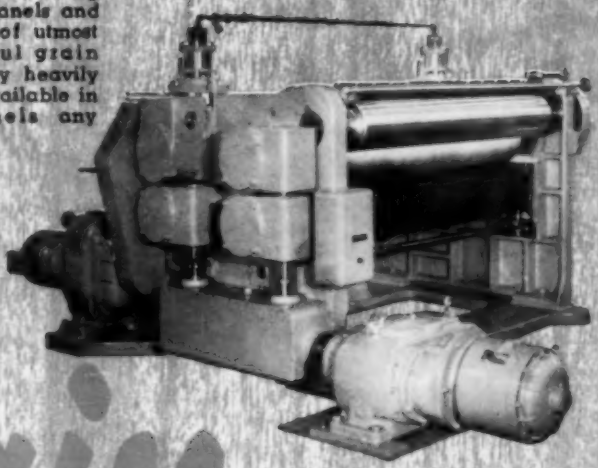
LOUISVILLE 3, KY.
U. S. A.

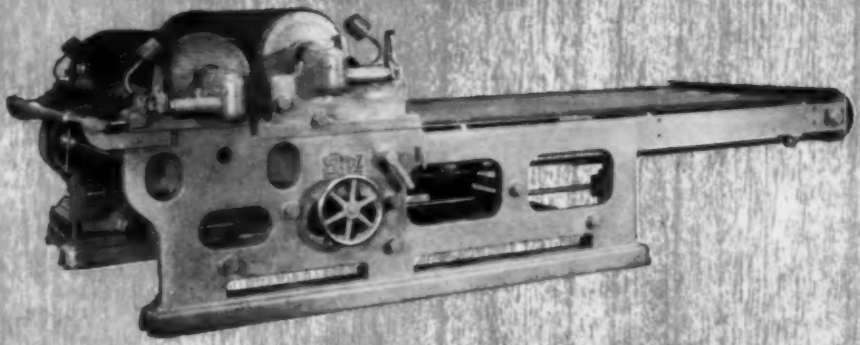
Reverse Roll Coater for eliminating imperfections in hardboard panels and other sheet material, which is of utmost importance in securing beautiful grain effects. These machines are very heavily and accurately built and are available in two sizes for 36" and 48" panels any length and up to 2" thick.



Grain

REPRODUCING EQUIPMENT

This large, heavy duty machine has been especially designed for printing unusually beautiful grain effects on large panels. Panels are automatically fed through the machine so that perfect registration of design can be had. Machine carries two sizes of engraved cylinders: 10" diameter for straight grain and 20" diameter where design of wood is such that repeating is objectionable. Standard size machines will handle panels 36", 48" and 84" wide, up to 12' long and from the thinnest to 2" thick.



[Continued from page 13]

Fish-eye Effect

Look for dirty surface or improperly sanded surface. You may have a bad flow-out of base coats, or overspray, etc.

Indistinct Grain Pattern

Look for dull doctor blades and/or unclean cylinders.

Color Off Standard

Look for improper cleaning of ink system after a change-over; or the base coat may not be agitated sufficiently.

Corrugated Effect

Look for dirty cam plate under doctor blade and/or dirty drive chain.

I have tried to set down some of the many things a new operator should look for. However, it is quite impossible to anticipate and cover all possible contingencies. But if common sense practices are adhered to, mechanical wood graining can become an easy and dependable routine operation.

Oakite Promotes Seib and Steif

George M. Seib, formerly secretary of Oakite Products, Inc., has been appointed vice president of the company, which manufactures industrial cleaning and metal treating compounds. Erwin H. Steif, who was Mr. Seib's assistant, has been promoted to the post of secretary.

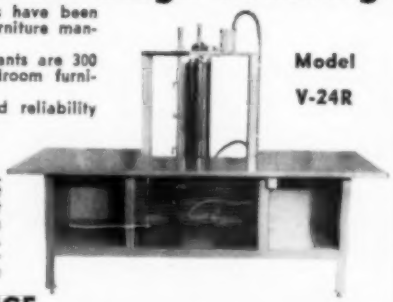
With Oakite since 1922, Mr. Seib has been a member of the board of directors since 1946, and has served as secretary since 1953. Mr. Steif joined Oakite in 1948 as legal counsel, and has served on the board of directors since 1953.

Wood Grain, Custom Design Printing

Our vertical and horizontal graining machines have been in service in plants of leading television and furniture manufacturers for many years.

Average production rates per day at these plants are 300 to 400 T.V. cabinets, or 75 to 100 sets of bedroom furniture.

These figures tell the story of confidence and reliability in our machines.



Model V-24R

SIMPLICITY

Our byword for design in production machines. The Shelton grainers are the most straight forward approach to wood graining equipment offered to the manufacturer. Absolute minimum of maintenance and extremely simple to operate. Inexperienced operators have produced top quality work on a conveyorized production line with less than one hour instruction.

SERVICE

We make our own gravure cylinders and gelatin rolls using processes developed after years of research by our research department.

To you, this means buying machines, cylinders, and gelatin rolls from one source, thus assuring you prompt deliveries and service.

SHELTON GRAINING SUPPLIES, INC.

BURBANK, CALIFORNIA

Address inquires to our engineering representative:

ELECTRO-MECHANICAL INSTRUMENTS, INC.

553 EAST WALNUT ST., PASADENA, CALIF.

for QUICK action do it this way

To get additional information on the materials, equipment, accessories and supplies advertised in this issue, just fill in the name of advertiser and page number of advertisement in question, on the card below; print or type your own name, your company's name and address, detach and mail. No postage required.

For further information on what manufacturers have to offer—literature, products, supplies, etc., mentioned in the editorial departments, use "Reader Service" return card in the rear section of this issue, page 132.

Industrial FINISHING
June, 1958, Issue
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FINISHING

OCTOBER, 1958, issue

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Send your inquiries to

INDUSTRIAL FINISHING Magazine for information about technical paint coating problems, methods and processes; and for sources of supply for organic finishes, equipment and supplies to be used in connection with surface preparation and conditioning, paint application, sanding, paint drying and baking, rubbing, polishing, etc.

Surfaces to be completely or partially coated for protection, decoration or for any other purpose, include components and articles made of metals, plastics, woods, and composition materials; also paper, leather, rubber and fabrics.

The services of many testing laboratories, finishing consultants and special technicians are often available.

These inquiries are promptly answered. As a result, new products, materials and sources of information are continuously being uncovered; valuable contacts are made and timely suggestions for future articles to be published are often developed.

Postage Will Be Paid by Addressee

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BUSINESS REPLY MAIL
First Class Permit No. 1490, Indianapolis, Indiana

Industrial Finishing Magazine
1142 N. Meridian Street
Indianapolis 4, Ind.

Tousey's New Hammercote®

Here is a finish that adds 2 important selling features to any hammer coated product.

UNIFORM PATTERN

Despite changes in spray gun pressure of 5 to 10 lbs. or considerable variations in the amount of thinner added, Tousey Hammercote goes on easily, with a smooth and uniform pattern at all times.

MAR-PROOF SURFACE

In the final baked form, Tousey Hammercote has a hard mar-proof film with a high lustre . . . gives the effect of an extra coat of clear having been added.

TOUSEY PRODUCTS

DURACOTE for DURABILITY

Call Tousey today, and place your order.

TOUSEY VARNISH CO. 520 West 25th St. • Chicago 16, Illinois
VI ctory 2-2200

airless* SPRAY COATING

*Spray Painting Without Air

Spray Painting With Air — Airless

This new spray painting process (without air) will minimize your over-spray problems, reduce health and fire hazards, cut maintenance and clean-up costs, save paint, time and labor as well as reduce your auxiliary painting equipment requirements.

Over and above these advantages . . . a Better Finished Product is the final result. See it at the show.

YOU'LL SEE IT AT THE SHOW!

in operation at

BOOTH 1219
National Metal Exposition, Cleveland, Ohio
Oct. 27-31 1958

Write for Airless Spray Painting brochure.

U S NORDSON

NORDSON CORPORATION

FORMERLY BEDE PRODUCTS CORPORATION

THE BEST IN SPRAY COATING EQUIPMENT

AMHERST, OHIO — YUKON 8-4473

In Canada: 864 Pape Ave., Toronto, Ontario

PICTURE OF MONEY?

Yes, the right new finishes always make more money for manufacturers. New finishes can add a distinctive touch to your products . . . revolutionize your sales patterns within a few months.

Perhaps your product needs new sales impact. Why not increase your potential with a specifically designed Wolverine finish too? Our creative laboratories are at your service to help develop an entirely new, sales-stimulating Custom Finish for you . . . that will be yours . . . and yours alone.

WOLVERINE FINISHES CORPORATION

836-50 Chicago Drive, S.W.
Grand Rapids 9, Michigan

Specialists in the Manufacture of CUSTOM Industrial Finishes . . .
Stains, Fillers, Glazes, Lacquers, Enamels, Synthetics.

Plants in Grand Rapids, Michigan; Louisville, Kentucky; and Morganton, North Carolina

Multi-Color Finishes
applied electrostatically

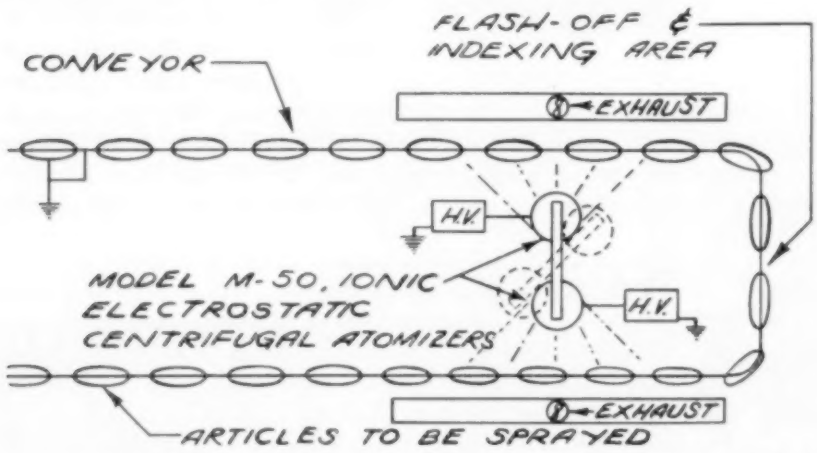
By John Sedlacsik, Jr., President
Ionic Electrostatic Corporation

SUBSTANTIAL RESEARCH work has been done in the protective and decorative coating industries to aid in the development of new and better industrial paint, enamel and lacquer materials and application methods.

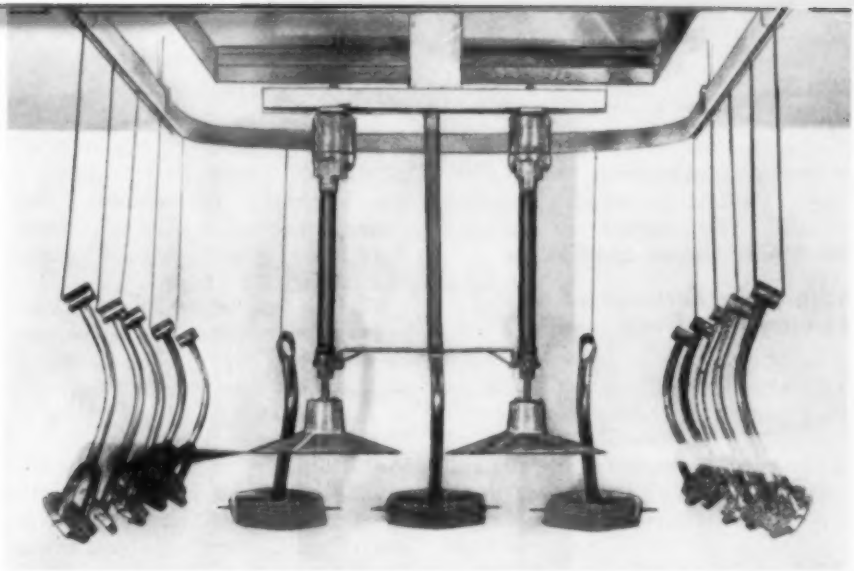
In an effort to increase production, to decrease costs and to stimulate sales, many concerns have sought unique finishes for their products, as well as application methods to apply same. Many of these concerns have investigated electrostatic processes. Heretofore, only single solid color coating materials could be satisfactorily or uniformly applied by such means.

After many years of research, Ionic Electrostatic Corp. has developed a "multi-color" electrostatic spray process or system* which is now available to industry. This new system, designated as Model M-50, opens up new fields of endeavor for the coating industry. Various types of smooth multi-color finishes can be applied electrostatically. *The system utilizes an array of airless variable-speed centrifugal atomizers for blending and atomizing different single solid color coating materials which are individually supplied at controlled*

*Patents applied for.



Conveyor layout showing a pair of disc atomizers positioned to apply a multi-color finish.



Electrostatic spray painting system set up for spraying two colors to produce multi-color.

Between the atomizer heads, paint particles are repelled, but in the space between items, hanging from the conveyor and the near atomizer head there is a very strong attraction, consequently a wrap-around action occurs, and a spray of paint is directed toward the articles being painted.

rates to the inner bottom surface of each atomizer head by separate, variable-output, positive-feed displacement pumps to produce smooth multi-color effects.

Particle size, or the degree of atomization of coating materials can be regulated by varying the rotational speed of the atomizers. The heads of the atomizers are charged at or up to 140-kilovolts by a direct-current high-potential power supply which ionizes the coating materials projected outwardly by centrifugal force.

Safety Devices Operate Automatically

The high potential power supply which is U.L.† approved is constructed in accordance to J.I.C.** Standards and incorporates a special safety arc-guard designed to make the unit inoperative if the distance between the electrostatically charged atomizers and any articles to be coated varies to an excessive extent, due to swaying of articles hanging from the conveyor. In most cases, it is advantageous to interlock the complete system to stop the conveyor, paint pumps, etc., in the event that such excessive swaying occurs.

The high potential charge induced on the centrifugal atomizers assists dispersion, atomization and deposition of the coating materials onto the articles to be coated, which are of opposite polarity. For some applications the heads of the centrifugal atomizers are inverted to facilitate mixing of solvents and

†Underwriters' Laboratories
**Joint Industrial Conference

coating materials within the heads of the atomizers prior to their release. Centrifugal atomizer heads of different diameters are available for use in specific applications.

Adjustable Features of Electrostatic Units

In most installations the atomizers are attached to an overhead or pit-mounted hydraulic reciprocator to provide uniform application of the coating materials along the full vertical extent of the object to be coated. [The articles to be coated are hanging from an overhead monorail conveyor as they travel through the electrostatic zone.] The travel or stroke of the reciprocator can be adjusted to make possible the coating of objects of various lengths. This is done by adjustment of two limit switches which are actuated by a vertically reciprocating shoe or bar synchronized to the hydraulic reciprocator. Stationary inclined centrifugal atomizers are also available for coating small articles.

Close-up view of airless atomizer discs. Between the atomizer heads, paint particles are repelled, but in the space between items, hanging from the conveyor and the near atomizer head there is a very strong attraction, consequently a wrap-around action occurs, and a spray of paint is directed toward the articles being painted.

The system is flexible for coating parts of various sizes and shapes because the centrifugal atomizers can be positioned relative to each other and to the conveyor. The distance between the edge of the atomizers and the conveyor can be regulated by adjusting the spacing between atomizers, or by swiveling the entire atomizer assembly to a desired position to obtain necessary clearance for large or small parts.

[EDITOR'S NOTE: In referring to some of the illustrations that accompany this article you may wonder why liquid paint, whirling off a spinning atomizer head, doesn't fly off in all directions around the circle . . . . with only a small percent of it alighting on the articles which travel by conveyor in a straight line past the atomizer heads. There are two atomizer heads, one serving each leg of the U-shaped conveyor line. The electrostatic zone, produced by charged atomizers carefully positioned, is such that in the area between the atomizer heads, paint particles spinning off one atomizer head are repelled from the other atomizing head, and are attracted to the oppositely charged articles moving along on the conveyor line. Consequently a wrap-around action occurs, which causes the paint "spray" from the atomizers to be directed toward the oppositely charged articles hanging from the conveyor. Strangely enough, adjustments can be made in this setup to produce a wide, medium or narrow fan shaped spray directed toward the work being painted.]

[*Continued on page 28*]

For modern shapes . . . spray on

Unichrome

COATING 6400

. . . for the look of leather

Modern quality products call for modern finishes—and economical means to apply them. Unichrome Coating 6400 offers both.

It's a smartly textured, damage-resistant, baked vinyl that's flexible and chip-proof, yet hard enough to resist marring, withstand heavy wear. Outlasts ordinary textured enamels by 10 to 1.

And it's *spray-applied.* No cementing, no seams, no scrap loss, no difficult or costly application. Film thickness range: 8 to 40 mils. Colors: anything at all. Send for bulletin.

METAL & THERMIT
CORPORATION
GENERAL OFFICES: RAHWAY, NEW JERSEY
Pittsburgh • Atlanta • Detroit • East Chicago • Los Angeles
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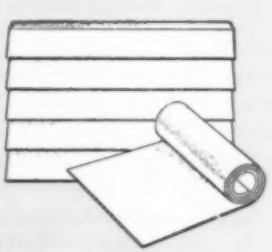
One coat does the work

AMAZING NEW

DURA

DURACRON ALONE combines in a single finish superior adhesion, color and gloss retention, durability, flexibility and resistance to chemicals, grease, humidity, moisture, salt spray, stains and impact—for a variety of uses.



PITTSBURGH® PAINTS

SYMBOL OF SERVICE FOR SEVENTY-FIVE YEARS

75 ANNIVERSARY 1883–1958

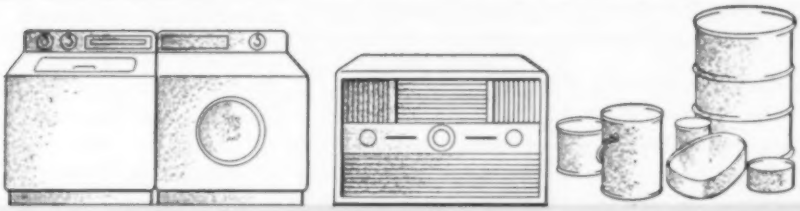
PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

# of two . . . with

CRON

THERMO-SETTING ACRYLIC ENAMEL



Now . . . tailored to your finishing needs!

Today's biggest news in finishes is the development of amazing DURACRON in a variety of formulations for many end uses. Since its introduction, this revolutionary chemical composition has convincingly demonstrated its superiority to ordinary baking enamels. *One coat does the work of the conventional two-coat finishing system.*

• **Now . . . DURACRON** is made available in a wide range of properties to enhance sales appeal and utility of products on which it is used. It can be sprayed, dipped or roll-coated. It can be cured at lower temperatures. And it can be used either as a one-coat enamel or as a topcoat with various primers. Mail coupon for more information.

Mail this coupon today for new book

Pittsburgh Plate Glass Company, Industrial Finishes Division, 1 Gateway Center, Pittsburgh, Pa.

Gentlemen: Please send me your new brochure, containing information about DURACRON Thermo-Setting Acrylic Enamel, and how it reduces manufacturing costs.

Name_____

Company_____

Address_____

City_____ **State**_____

[*Continued from page 24*]

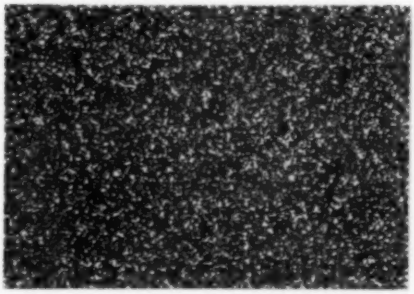
The intensity of the wrap-around of coating materials can be controlled by regulating the spacing of the atomizers from the articles to be coated, and by regulating the rotational speed of the atomizers and the output of the high potential power supply.

In some cases, it may be desirable to position the atomizers so that one atomizer head is much closer to the articles to be coated than the other. This arrangement allows paint material to penetrate farther into the cavities of articles entering into or leaving the spraying zone, without producing an excessive build-up of coating material on the surface of the articles.

Brief Drying Period Between Spray Stations

A heavier thickness of coating material can also be applied because a brief flash-off (air-drying) interval is provided between sprays while the objects are traveling around the U-shaped turn. This flash-off area can be used to index large parts to eliminate excessive build-up of coating material on the corners of objects being coated. The system also contemplates preheating or pre-baking of coating materials between sprays to alleviate sags or runs when heavy viscosity materials are being used. The variable control characteristics of the system make it adaptable for producing unique finishes and color combinations limited only to the imagination and ingenuity of the operator or his supervisor.

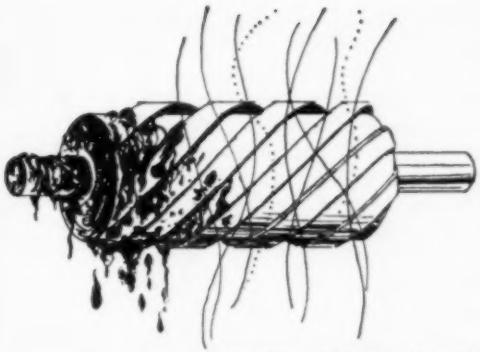
[*Continued on page 30*]



Typical sample of multi-color finish.

Some component parts that have been given a multi-color finish with centrifugal atomizers.

CUT DEGREASING COSTS by increasing efficiency!



---Dupont "TRICLENE" D®
(TRICHLORETHYLENE)

Aliphatic Petroleum Naphthas
Alcohols and Acetates
Alkanolamines
Aromatic Solvents, Petroleum and Coal Tar
Chlorinated Paraffins
Chlorinated Solvents
Dowanols and Glycerine
Glycols and Glycol Ethers
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Oils and Fatty Acids
Plasticizers
Resinates-Sodium and Potassium
Rosins-Gum and Wood
Stearates
Terpene Solvents
Waxes

the best all-purpose vapor degreasing solvent ever made!

★ **Fewer work interruptions** due to fewer cleanouts.

★ **Less Down-Time** for maintenance. Less sludge, faster cleanouts.

★ **Fewer rejects.** Contains no elements to accelerate staining.

★ **Resists** all major causes of solvent breakdown.

★ **Quick drum delivery** from local stocks.

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Cincinnati 29, Ohio

BUFFALO SOLVENTS & CHEMICALS CORP.
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CENTRAL SOLVENTS & CHEMICALS CO.
2540 West Flournoy Street—SEeley 3-0505
Chicago 12, Illinois

DIXIE SOLVENTS & CHEMICALS CO.
Dixie Highway at Appleton Lane—Emerson 8-5828
Louisville 16, Kentucky

HOOSIER SOLVENTS & CHEMICALS CORP.
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MISSOURI SOLVENTS & CHEMICALS CO.
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SOUTHERN SOLVENTS & CHEMICALS CORP.
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THE SOLVENTS AND CHEMICALS GROUP
2540 West Flournoy Street • Chicago 12, Illinois

Ventilation is required only for removal of solvent vapors which may accumulate, so there is a minimum of heat loss from the factory interior through exhaust fans. Also, this leaves very little clean-up work to do around the painting zone.

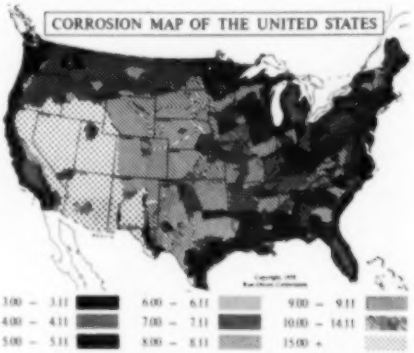
This system of electrostatic coating is capable of applying various types of conductive and non-conductive coating materials such as lacquers, enamels, varnishes, wrinkles, etc. Either single or multicolor finishes or patterns can be produced. The process is capable of coating practically any products that can be moved through painting zone by conveyor.

How Long It Takes To Rust

THE COMPARATIVE rates at which rust proceeds in different parts of the country, have been exactly established for the first time for all U. S. cities over 10,000 population.

It takes three years, the fastest rate in the country, for rust to corrode a standard, uncoated steel test panel, the size of an auto license plate, in four different cities—Buffalo and Rochester, N. Y.; Erie, Pa.; and Miami, Fla. Slowest rust rate, more than 15 years, is in Tucson, Ariz.; Roswell and Santa Fe, N. M. In all the nation's major industrial centers the rust rate is under four years.

This was disclosed in the first Rust Index of the United States, published by the Rust-Oleum Corp., Evanston, Ill. The Index, the result of a 25-year research program, lists the 523 cities of the country with a population of more than 10,000 and the comparative rust rate for each city. Variations in rate result from the different amounts of rainfall, wind, corrosive gases, sunlight, and salt water present in each locality.



Map above shows the rates at which rust proceeds in different parts of the country. Published in a Rust Index of the U. S. by the Rust-Oleum Corp., Evanston, Ill., the data was compiled in a 25-year research program. Thousands of dated and uncoated test panels of 28-gauge steel were left exposed at industrial sites throughout the country to establish the rate of rust in each locality. Numbers to left of solid black (3.00-3-11) and shaded rectangles indicate the number of years and months required to corrode an uncoated 28-gauge test panel to a severe degree.

The rust rate is 3 years, one month in Pittsburgh; 3 years, 2 months in Los Angeles; 3 years, 3 months in Cleveland; 3 years, 5 months in Chicago; 3 years, 6 months in New York City; 3 years, 8 months in Philadelphia and Detroit; 3 years, 9 months in San Francisco; and 3 years, 10 months in Boston and St. Louis.

Rust-Oleum Corp., which produces rust-preventing coatings, estimates that the nation's rust bill is currently about $7½ billion per year, an increase of $2 billion over the annual toll 10 years ago.

Good lighting avoids glare, for glare can actually hurt your eyes because of its effect on the muscles which open and close the pupils.

Bonderized Treatment Saves Steel Lockers

STEEL LOCKERS are now being given extra protection against rust with the same treatment that is used on automobile bodies. Bonderizing, a metal surface treatment that inhibits rust formation, is being applied to the complete line of school, industrial and institutional lockers manufactured by Republic Steel Corp.

Completion of a new $1,500,000 surface treating and painting unit at the Berger Division plant in Canton, Ohio, makes Republic Steel the first locker manufacturer to employ 5-stage Bonderizing for its complete locker assemblies.

Quoting Mr. Charles E. Howes, General Sales Manager of the Berger Division, "Bonderizing our lockers entails a rust-retarding surface treatment for all metal parts. The surface coating is a non-metallic phosphate, applied to locker parts prior to painting and assembly.

"In addition to inhibiting rust, the Bonderized coating forms an extra anchor for the enamel. This helps to prevent the paint from peeling or lifting under the most severe service. It minimizes maintenance expenses for locker installations."

By Bonderizing its line of lockers, Republic Steel has added another feature to improve locker service and performance. According to the manufacturer, the Bonderizing will preserve the baked-on finish and keep each locker looking attractive for many years of hard daily use. [*To 32*]

GRIPALLOY®
primer and enamel

. . . A Corrosion Resisting, Metal Etching Coating, designed as a primer . . . . May also be used as a top coat . . . . Available in all colors . . . . Tight adhesion to 25 different metals . . . . A natural for Magnesium Alloys, Aluminum and Non-ferrous metals . . . . Air dries in 5 minutes for most topcoats.

TENAX FINISHING PRODUCTS CO.
Newark 5, New Jersey
Lacquers — Enamels — Synthetics — Vinyls

These new lockers promise to be particularly useful, the manufacturer points out, in locker rooms where moisture is heavy. This is an especially serious problem in many schools and factories that have been equipped with gang showers. Condensation of steam vapors from the showers creates an almost uncontrollable moisture problem, which is successfully overcome by this surface treatment before applying the bake finish.

Bonderizing is not an innovation to Republic Steel. The company has used the process for more than ten years on its line of kitchen cabinets. Lockers for special requirements have also been given a phosphate coating in small lots during the past 18 months. With the completion of the new production equipment, all Republic Steel lockers will be protected by Bonderizing.—*Republic Steel Corp.*

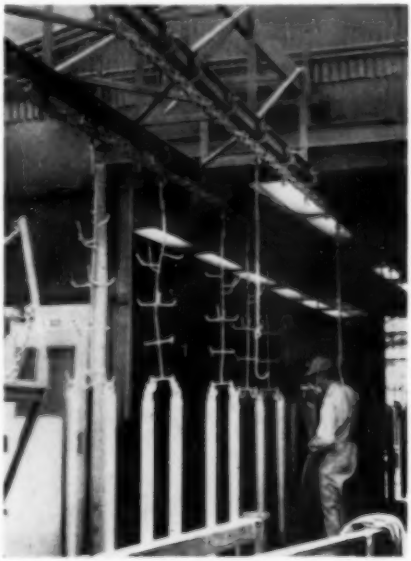
Facilities for Finishing

THE REGENT Mfg. Co. of Downey, Calif., has expanded its facilities to keep pace with the requirements of Regent customers. A phosphating process system has been installed to meet Military Specification MIL C-490 for phosphate coating.

After phosphating, parts are painted in a newly installed, conveyorized, down-draft paint booth which is 18-ft. wide and 35-ft. long. The new conveyorized down-draft paint booth is served by a 300-ft. long conveyor.

First use of the new facilities was on an order for 350 storage racks and 300 tons of shelving, fabricated by Regent for installation in Western Electric Co.'s plant in Los Angeles.

The phosphating process puts a chemical coating on metals. The coating consists of a complex growth of non-metallic crystals which are soft and porous, yet firmly adherent to the surface. The chief merit of the phosphate coating is its ability to hold paint or other organic coatings closely bonded to metal surfaces. Interlocked with the surface, the phosphate coating provides a combination that wards off moisture, chemical fumes, moist air, local electric currents, friction, and many other conditions that contribute to the breakdown and corrosion of metals.



Two conveyors serve the down draft booth.

Naphthenic Acids Bulletin

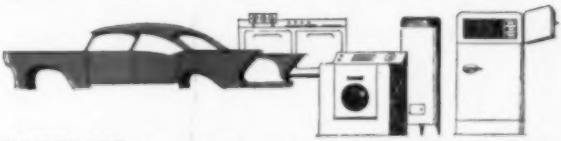
A new technical bulletin on Sun Oil Co.'s three grades of Sunaptic (naphthenic) acids gives information on properties, specifications, applications, etc. Sunaptic acids are used in making all types of emulsions and corrosion inhibitors.

Copies of the bulletin are available from Sun Oil Co., Industrial Products Dept., 1608 Walnut St., Philadelphia 3, Pennsylvania.

For more data, circle 15 on colored card.

ISOPHTHALIC RESINS

offer your products new sales appeal



BAKING FINISHES **Isophthalic resins will produce a tougher, harder baking finish that will retain its original gloss. You also get a finish that has greater resistance to alkali, mineral spirits and water. And because of greater thermal stability of Isophthalic resins you can maintain higher-temperature baking schedules—less time needed for products in the baking oven.**

INDUSTRIAL FINISHES **Years of extra service can be added to metal-surface coatings by employing Isophthalic resins. Better film to metal bonding of Isophthalic resin paints means improved performance—saves time, cuts painting costs. The tougher films have better abrasion resistance, hold up longer under weather conditions, have better gloss retention. Isophthalic resin automotive refinishing enamels have held 85% of their original gloss after 24 months of outdoor weather exposure. There was no evidence of film failure by cracking or checking. They proved far superior to conventional refinishing enamels.**

It's worth your time — now to get the full Isophthalic resin story. Write or phone the Oronite office nearest you.

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A CALIFORNIA CHEMICAL COMPANY SUBSIDIARY
EXECUTIVE OFFICES • 200 Bush Street, San Francisco 20, California
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5008

Conveyors, Ovens For Wood Finishing

MODERN production demands—not to mention manufacturing costs—almost compel the wood products manufacturer to go to conveyorized finishing and forced drying of the coating materials he uses. It is wasteful and awkward to move products from station to station on wood skids or castered trucks or dollies. The old fashioned "drying room" is not enough to keep pace with the fast finishing schedules of today.

Choice of a conveyor—a near-the-floor pallet type or the overhead monorail—will depend largely upon the size and type of the product and the physical layout of the plant. Both types have been used under certain given conditions.

Selection of the drying oven is extremely important. A "home made" make-shift oven should not even be considered. Only a correctly engineered oven can offer controlled heat, humidity and air circulation, with adequate exhaust and fresh air facilities. These features, properly balanced and controlled, are necessary to the successful drying of modern finishing materials.

Wood finishes dry by evaporation, oxidation and polymerization. Water, NGR and shading stains, toners, lacquer sealers and lacquer top coats dry by evaporation. Some pigmented stains, fillers, varnish sealers, and varnish top coats may dry by any of the three processes, depending on the particular material. Syn-

FREE...

Case History reports that prove MOGUL M-55 can save you money . . . $

The North American MOGUL Products Company

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. . . Write for literature and actual case history reports on results.

NEW... MOGUL M-55 liquid treatment for water wash paint spray booths is SAFE to use, will not harm personnel. Provides an excellent paint blanket . . . protects equipment and keeps your water circulation system at top operating efficiency. A 60 day trial offer will prove MOGUL M-55 results in your own operations.

no rubbing needed!

to produce a rubbed appearance or a waxed feel

PERFEX SATIN FINISHES

have long been recognized and acknowledged as the BEST flat finishes made. NOW these flat finishes have been made more desirable than ever because of these new features—

- Dust free time has been greatly reduced.
- Print free resistance has been greatly increased.
- Clarity has been greatly improved by its new pale color.
- Drying time has been reduced.
- Rubbed effect appearance and wax effect feel have been improved.
- Body and build have been improved . . a synthetic with varnish build.

PERFEX SATINS are available in a full range of sheens to produce the exact rubbed effect and waxed feel you wish.

PERFEX was the original "flat" to be made by a new and different process (without the use of stearates or flattening agents) and it is still the "flat" which comes nearest to producing an actual rubbed varnish appearance. It is the *Perfect* flat finish—quick set, quick dry, waterproof, liquor proof, good build, full smooth body, beautiful rubbed effect, smooth waxed feel.

PERFECTION

If you manufacture furniture and are interested in securing an excellent rubbed finish effect, without a costly rubbing operation, we invite your inquiry.

PAINT AND COLOR COMPANY

INDIANAPOLIS 2, INDIANA

thetic sealers and top coats may dry by either evaporation or polymerization, depending upon the material.

The manufacturer who contemplates the installation of force-dry ovens should get his supplier of finishing materials together with an oven manufacturer and his own production people, in order to obtain the type of oven that is best suited to his particular needs. It is not a matter of guesswork, snap judgment, or just plain hope that it will work out all right. Selection must be based on actual facts and figures.—*O. T. G.*

Lingle, V.P. of Industrial Sales For Oakite Products

Eustace Lingle, of 345 Crest Road, Ridgewood, has been named vice president in charge of the industrial sales and education for Oakite Products, Inc., manufacturers of industrial cleaning and metal treating compounds.

Mr. Lingle joined Oakite in 1929. After serving in several positions in the sales department, he was elected to the board of directors in 1939, and named vice president in 1953. He has now been given additional responsibilities in sales, sales planning, and technical education.

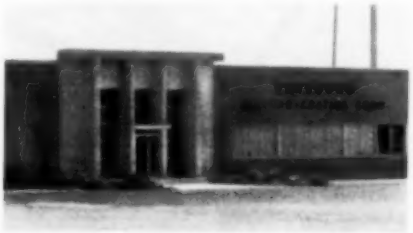
Material Handling Handbook

How Rapistan equipment solves materials handling problems in business and industry is vividly told in a 43-page handbook released by The Rapids-Standard Co., 342 Rapistan Bldg., Grand Rapids 2, Mich., manufacturer of Rapistan conveyors, casters and wheels. Ask for Bulletin GC-58.

For more data, circle 16 on colored card.

Ransburg Electro-Coating Corp. In New $1,500,000 Building

Ransburg Electro-Coating Corp., pioneer in electrostatic spray painting, now occupies a new 330x240-ft. single-story building at 3939 W. 56th St., Indianapolis, Indiana. The building is of brick and stone construction with aluminum windows. Most of it is air conditioned. North side of the building, fronting on 56th St., has executive, sales and service offices, lobby and drafting room.



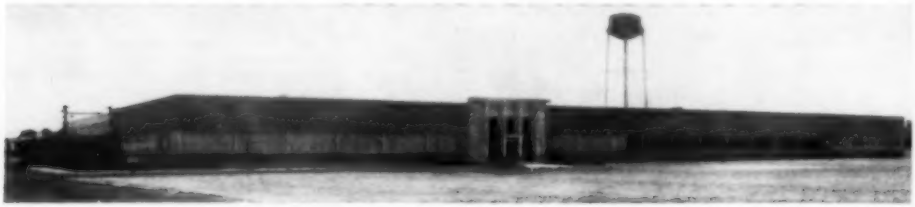
Close-up of impressive front entrance.

Elsewhere in the building are laboratories in which equipment and facilities are set up for experimental and demonstration painting by electrostatic processes. Included are conveyors like those that operate in other plants; also ovens for baking paint coatings, and facilities for stripping off various coatings.

Other technical facilities include the automatic equipment manufacturing area, a machine and welding shop, and a conference room set up with movie projection equipment. Part of the plant includes paint mixing and stripping rooms. There is storage space for products sent into the plant for laboratory demonstration painting. A fireproof paint storage building is located at the rear, away from the main building.

In addition to the new 56th St. building, Ransburg has a 3-story engineering

Here you see north front and east sides of Ransburg's new plant in Indianapolis, Indiana.



NEW! SUNSTOP LACQUER

. . . at last a colorless lacquer that stays colorless!

For years, one of the biggest problems in clear finishes for wood and metals has been the pronounced lack of resistance to fading, yellowing and staining. Conventional "water white" lacquers have left much to be desired.

But now a major breakthrough has been achieved. Spruance has formulated a revolutionary new lacquer called SUNSTOP. Based on Half-Second Butyrate, this crystal clear lacquer is tough, strong and durable. It resists discoloration and stain damage from water, alcohol, detergents, rubber, ultraviolet light and sunlight.

SUNSTOP is quickly and easily applied by conventional techniques and equipment. It air dries in minutes. There's a SUNSTOP formulation that's perfect for wood or metal . . . from furniture to auto grilles.

We can furnish all details or a demonstration in a hurry. Write today!

Spruance

fine finishes

THE GILBERT SPRUANCE CO. • Philadelphia 34, Pa. • Winston-Salem, N.C.

building located in downtown Indianapolis. This 65,000-sq.ft. building is devoted to research and development, legal offices and storage.

The process of electrostatic painting was developed in the pre World-War II days by Harold Ransburg who worked in his father's factory, Harper J. Ransburg Co., manufacturer of bread boxes, canister sets, trays and cookie jars. Disturbed by the amount of paint wasted in overspray by ordinary hand spray painting, young Ransburg developed the electrostatic method of applying paint. The original process, using compressed air for atomization, is known as the Ransburg No. 1 Process; it is still used in many plants.

The Ransburg No. 2 Process atomizes coating materials without using compressed air and it provides much greater efficiency. In most instances, the No. 2 Process is 98% efficient. Ransburg units are widely used in large and small plants in this country and abroad for the application of various types of protective and decorative coatings.

The electrostatic spray painting process is based on the well-known principle that opposites attract each other, while likes repel. A strong electric field is created between the atomizer and the article to be painted. This zone of static electricity transforms the coating material into a fine spray of highly charged particles, creating an irresistible attraction that makes the particles of paint fly to, adhere to, and form a smooth coating of uniform thickness over the grounded articles being moved through the zone by conveyor.

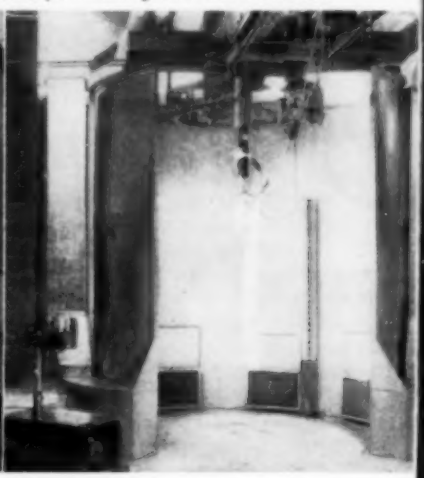
Binks Mfg. Co. Will Be at the Metal Show in Cleveland

The Binks Mfg. Co., manufacturer of spray painting equipment and industrial and commercial cooling towers, will display some of its latest products at the National Metal Show & Congress, October 27-31, in Cleveland, Ohio. The company's display will occupy booth No. 1501 at the show.

Included in the display will be the new Binks Modular Electrostatic spray painting units, rotary automatic spray painting equipment with electric timers and conveyor, a new paint heater and Kayo and Pogo series paint pumps delivering paint at a 2 to 4-1 ratio.

Representing the Binks Company at the show will be Burke B. Roche, president of the company, W. W. Roche, sales planning director, B. J. Hedger, sales manager, W. T. Kernan, sales promotion manager, C. T. Rood, Cleveland branch manager and James Rice, manager of the company's Electrostatic Division.

At left: View in lobby and reception room. On the wall is painted a world map with Ransburg sales and laboratory locations indicated in the U. S. and foreign countries. At right: One of the conveyorized electrostatic painting setups for experimenting and demonstration.



Product: 99.75+% Pure
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Every batch checked. Every can filled with a full weight of extra high quality 99.75+% Chromic Acid. Prompt delivery from ample factory and nearby distributor stocks. Why not order BFC Chromic Acid next time?

BETTER FINISHES & COATINGS, INC.

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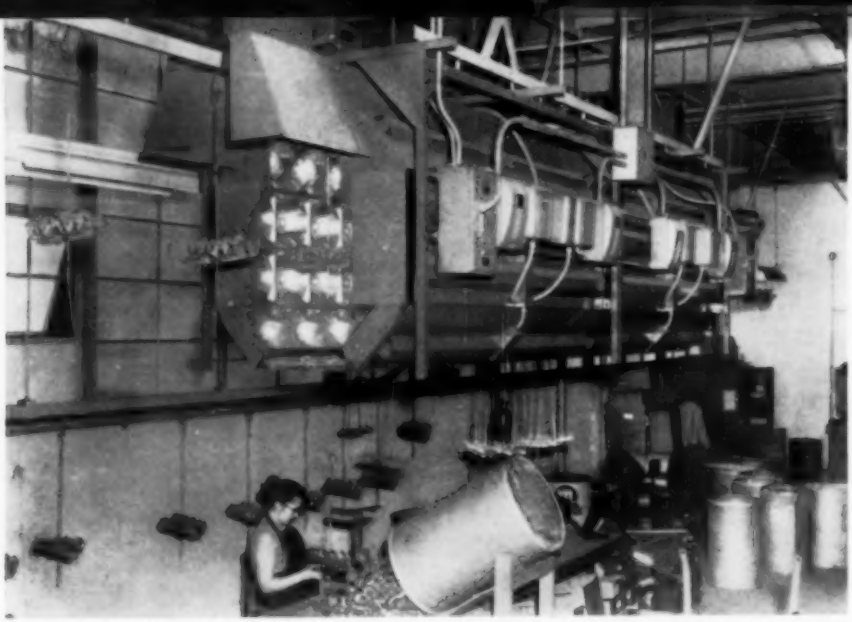


Dip coated metal parts, positioned in multiple on work holders, move by conveyor through an infrared oven which has controls to provide heat flexibility, ventilation and safety.

Oven Installation Bakes Paint on Metal Parts

WHEN THE Edwards Co., Inc., Norwalk, Connecticut, planned its new plant at Pittsfield, Maine, one of the decisions the management had to make was to choose a suitable oven for paint baking.

The Edwards Co. manufactures a varied line of electric signaling, communication and protection devices for homes, schools, hospitals, offices and industry. Because of the variety of metal parts processed, it was important that the company choose an oven that would bake the paint on all of these parts equally well; in other words, an oven with extreme flexibility.

Now that the plant has been in operation for a year, the firm is well satisfied with its new infrared oven, according to Mr. Len Raynsford, Supervisor of Industrial Engineering.

Heat Adjustment is Easy; Ventilation; Safety

The new infrared oven, shown in the accompanying illustration, is used to bake various finishes on bases and covers for household bells and buzzers, transformer covers, and fire alarm stations. This overhead mounted oven is approximately 15-ft. long. Heat flexibility

[*Continued on page 44*]

Phosphating processes now available...to fit any production or cost requirement!

New Turcoat concept puts better paint adhesion within the reach of everyone!

In the past, phosphating processes—due to their high initial costs—have principally been utilized only by the larger plants. Realizing the need for better paint adhesion and corrosion resistance among many plants who have not previously utilized phosphating, Turco has broadened its Turcoat line and now offers—for the first time—phosphating processes that can be tailored to fit your individual *production* and *cost* requirements. Turcoat processes currently in use range from small, inexpensive 3-tank set-ups all the way to elaborate 11-stage spray washing systems. With Turcoat, paint is anchored uniformly... permanently. Should accidental gouging occur, there is no corrosion "creep-back" under the paint. Turcoat systems quickly pay for themselves by slashing number of rejects and other problems involved in improper preparation, by minimizing packing and crating costs, by establishing and assuring customer preference.

TURCO

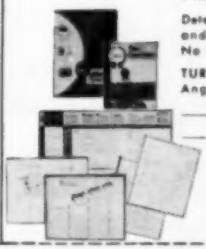
TURCO PRODUCTS, INC.

Chemical Processing Compounds

6135 So. Central Ave., Los Angeles 1, Calif.

Offices in all Principal Cities

Mfg. in Canada by B. W. Deane & Co., Montreal



***FREE* PHOSPHATING ANALYSIS KIT!**

Determine how your products are adaptable to phosphating and to the many paint adhesion advantages it offers. No obligation.

TURCO PRODUCTS, INC., 6135 So. Central Ave., Los Angeles 1, Calif.

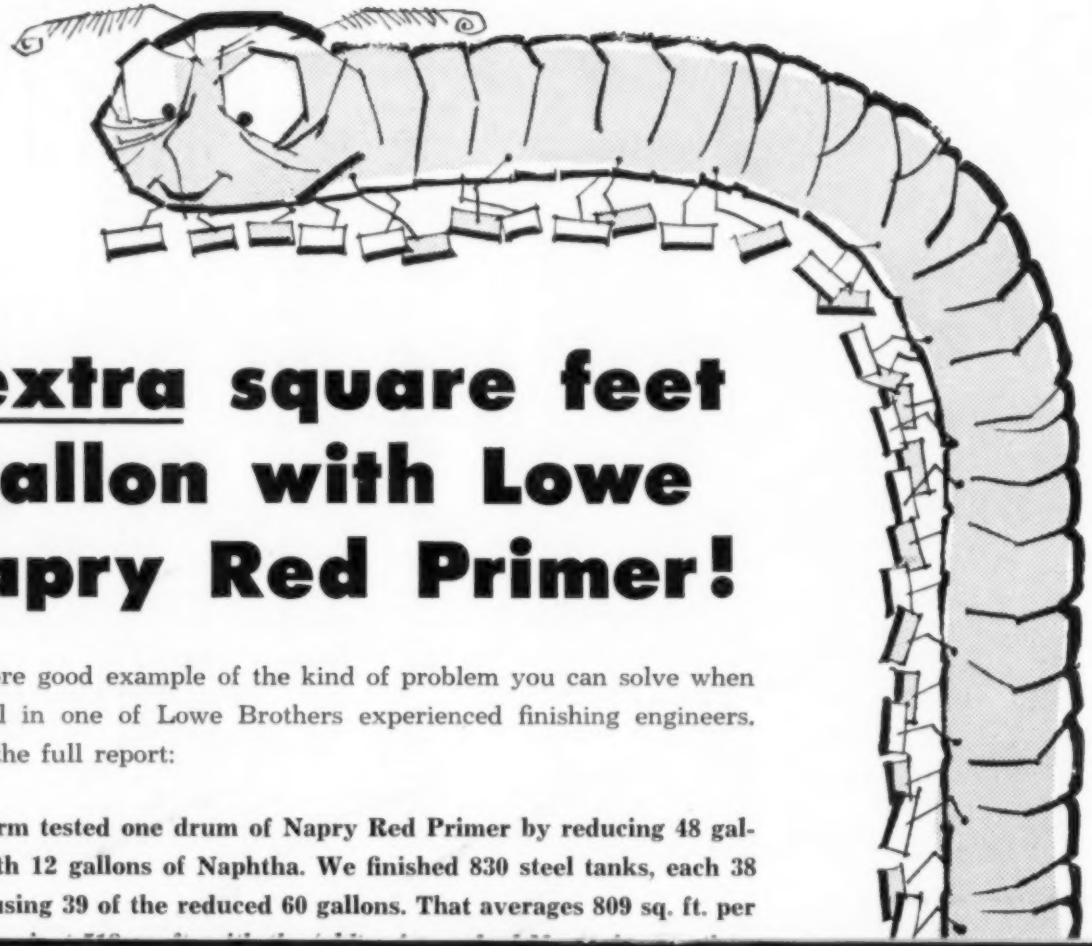
_____ Please send free Phosphating Analysis Kit

_____ Please send field engineer for on-the-job survey

Name _____ Title _____

Firm _____

Address _____ IF



296 extra square feet per gallon with Lowe Napry Red Primer!

One more good example of the kind of problem you can solve when you call in one of Lowe Brothers experienced finishing engineers. Here's the full report:

"This firm tested one drum of Napry Red Primer by reducing 48 gallons with 12 gallons of Naphtha. We finished 830 steel tanks, each 38 sq. ft., using 39 of the reduced 60 gallons. That averages 809 sq. ft. per

gallon against 513 sq. ft. with the 'old' primer. And Napry is smoother,

sq. ft., using 39 of the reduced 60 gallons. That averages 809 sq. ft. per gallon against 513 sq. ft. with the 'old' primer. And Napry is smoother, dried faster and cost 50c less per gallon."

Find out what a Lowe Brothers finishing engineer can do to help reduce your painting costs. Let him make a "flow-chart" analysis of your finishing system *without* obligation. Send the coupon right now.

LOWE BROTHERS
INDUSTRIAL FINISHES

QUALITY UNSURPASSED SINCE 1870

Style-tested paints for Home and Industry

REPRESENTATIVES IN: Chicago, Ill. • Boston, Mass. • Jersey City, N. J. • Cleveland, Ohio • Pittsburgh, Pa. • Rochester, N. Y. • Dayton, Ohio • Columbus, Ohio • Milwaukee, Wis. • Indianapolis, Ind. • Cincinnati, Ohio • Detroit, Mich. • Springfield, Mass. • Philadelphia, Pa.

The Lowe Brothers Company
Dayton 2, Ohio

IF 1058

☐ Please have my nearest Lowe Brothers Finishing Engineer call on me as soon as possible.

NAME_____

TITLE_____

FIRM NAME_____

ADDRESS_____

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for the various items is obtained through several means, for example, 1) varying the conveyor speed, thereby shortening or extending the time of products in the oven, and 2) using electric timers to fluctuate the heat at different levels for various times. The oven utilizes medium screw-base lamps which are available in wattages from 125 through 500 watts.

Factory Mutual specifications were required for the oven, which meant that a ventilating system had to be included. Controls were necessary to pre-purge the air in the oven before it is energized, and conversely when the oven is shut down. When the conveyor is stopped, the oven is shut down automatically. An air-flow switch, mounted in the ventilation stack, is tied in with the electrical control system in such a way that should the exhaust fan fail to operate, the oven will not operate either.

More Production . . . . and Less Maintenance

Based on actual record, the firm's output from a previously used oven on some of its parts was 974 pieces per hour. Production of the same parts has increased to 1150 pieces per hour through efficient use of the new infrared oven.

"Obviously, this increased production has resulted in considerable saving per unit cost, while maintaining product quality," Mr. Raynsford declares.

"Man-hours for maintenance of the new infrared unit have been negligible since its installation a year ago. This, we feel, has been accomplished by the use of new controls operating the lamps at reduced voltage when their full output is not required. Rugged construction of the oven has been another big factor," comments Mr. Raynsford.

The various parts that are put through the oven are placed on racks; then they are coated with paint by the dipping method. After a suitable drain time they enter the oven for baking. Parts are carried through the finishing system by an overhead conveyor.

Acknowledgment: This story and photograph were supplied by Fostoria Pressed Steel Corp., manufacturer of the oven.

Chemical Products For Metal Finishing

The best in Chemical Products for Metal Finishing will be the theme of Wyandotte Chemicals' J. B. Ford Division exhibit at the National Metals Exposition in Cleveland October 27-31, 1958.

Featured will be Bufsol, a new water-soluble buffing compound remover and New Nordall, a spray cleaner with exceptional rust protection and chemical products for imparting modern finishes to aluminum alloys.

Other products in the Wyandotte Industrial line, also to be featured, include electrocleaners for the plating industry, paint preparation and paint department maintenance chemicals, and Zorball, a safe floor absorbent.

Houston Paint Club Will Offer A Paint Course

The Houston Paint & Varnish Production Club, 1105 Prudential Bldg., Houston, Texas, announces that a paint course will be conducted this year by John Garrett. Final arrangements for the course are being made and all paint manufacturers in the area are urged to support the course by sending their employees.

Platers find many uses for chelating *cleaner

*A chelating (pronounced key-lating) cleaner converts metallic salts and oxides into compounds soluble in water

By chelating and removing rust or heat scale at the same time that it removes oil, Oakite Rustripper combines pickling and alkaline cleaning into one operation. It also avoids disadvantages of acid pickling, such as hydrogen embrittlement and etching of machined surfaces.

Platers now use Rustripper for dozens of difficult steel-cleaning jobs. Here are some examples reported in recent weeks:

CALIFORNIA: "Rustripper has ended pickling damage such as embrittlement." (Removing oil and light rust from machined landing gears before cadmium plating.)

NEW YORK: "Now saving about $10.40 per day on removing rust and scale and producing brighter plate." (Rustripper, added to reverse current cleaner in automatic plating machine, has eliminated separate pickling of wire towel racks before nickel and chrome plating.)

CONNECTICUT: "Rustripper added to reverse current cleaner has eliminated troublesome smut from metal furniture prior to copper-nickel-chrome plating."

NEW YORK: "Small steel aircraft parts were embrittled by acid pickling. Rust, heat scale and stains are now safely removed by Rustripper and cyanide."

NEW JERSEY: "Only two cleaning rejects in first 15,000 parts plated." (After Rustripper was added to reverse current cleaner in automatic plater to eliminate smut from tubular steel furniture.)

INDIANA: "Rustripper is the best barrel compound we ever used for this job." (Removing tough heat treat scale from steel screws.) "Total cleaning and zinc plating time has been cut in half."

FREE A 14-page illustrated booklet called *"Here's the best shortcut in the field of electroplating"* tells about many ways in which Oakite Rustripper can be of great value in the plating shop. Write to Oakite Products, Inc., 20 Rector Street, New York 6, N. Y.

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A Perfect Color Match in Production Painting

By Warren Beach, President Eclipse Air Brush Co.

THE COLOR PROBLEM was heightened when the automotive and other mass-production industries turned to more delicate pastels, new polychromatic finishes and to the multitude of light tints known as appliance whites. Because the assembled pieces must blend in perfectly as though painted completely in one operation, the standards of color matching became so exacting that new methods of assuring perfectly matched colors had to be found.

Using the automobile as an example, a body painted at one station in the huge plant swings from an overhead monorail to a point known as the "body drop" where it joins the chassis. Another 30-ft. or 40-ft. down the line the front end assembly, including the fenders, is mounted. Still farther on the hood is set in place—and eventually the wheels. Each part is painted in a different section of the plant, or even in plants at different locations, yet all must match perfectly when assembled.

To insure perfect matching, a system of color tolerances is now employed, based on the National Bureau of Standards (NBS) color unit. This unit is defined as three to four times the minimum color difference perceptible to the trained observer under the best conditions of observation. E. I. duPont de-Nemours & Co. holds its automotive and industrial color tolerances to a range of 0.3 to 0.4 NBS color units. A color half a unit from the standard supplied by the manufacturer is rejected. With such close tolerances demanded it is evident that an accurate method of reproducing color samples must be used.

Free Hand Manual Spraying Produced Variations

The old method of color matching and color testing by hand spraying was inadequate for the new colors and finishes. Human variations in manual spraying—such as speed of travel, distance of spray gun from the surface and angle of spray gun to the test panel—these differences

produced dissimilar results, even with the same batch of paint. You can imagine the "rhubarbs" that could and did arise from this situation. In fact, not only different operators but the same operator produced different results at different times.

This dilemma led to the development of a test panel sprayer which is practical and which removes all human error in the application of finishes for matching and testing.

Using the Test Panel Sprayer, You Get Accurate Duplication

The first successful test panel sprayer to be marketed is claimed by Eclipse Air Brush Co. The first

A method which makes possible an accurate matching of tricky polychromatic finishes, delicate pastels and appliance whites.

of these machines was purchased by E. I. duPont deNemours & Co. DuPont now has more than 40 units in operation at seven plants throughout the United States. Other machines have been purchased by paint manufacturers and end users, including several of the large automotive companies.

The new and improved Test Panel Unit, now available, has the following features: [*To page 48*]

Eclipse panel sprayer in use at laboratory of Maas & Waldstein Company.

1) It runs by compressed air, making it explosion-proof.

2) It is light and can be carried easily by one operator.

3) It runs at variable speeds which can be read directly in inches per minute from a dial at the front. These are in addition to the original features.

Tests Can Also Include Overlapping of Spray

Frequently a matching problem develops when one sprayed swath is overlapped with another, so an adjustable lapping attachment has been brought out. This permits lapping two swaths on one panel.

Since paint is not produced in a continuous run, each order must be tested and matched to the customer-accepted standard for color and other characteristics. The "OK" to run the batch is then given. After a batch is completed a wet and/or dry (panel) sample may be sent to the customer for his acceptance before shipment. Throughout the process test panel sprayers are used.

Speed of Travel, Distance From Surface, Duplicated in Tests

Today the operator—whether a production color shader or quality control technician—can quickly fit a panel of any size (3x5-in. to 12x14-in.) or material against the venturi operated suction cups. Then he sets the speed as designated in the specifications (anywhere from 300-in. to 2500-in. a minute) and the distance from the gun to the panel (from 6-in. to 18-in.). After the spray gun is adjusted vertically (anywhere 6-in. above or below center line of the panel) the operator can produce a test panel to specification.

Once the specifications are followed, the end result is always the same. The coatings are of uniform thickness and the colors can be duplicated in test panels, whether in South Bend, Detroit, Philadelphia or San Francisco.

Polychromatic Colors and Appliance Whites to Match

The Test Panel Sprayer has made possible the development and classification of thousands of polychromatic colors that are employed in the finishing of vacuum cleaners, water coolers, air conditioning units, lamps, filing cabinets and automobiles.

At the present time the automotive industry probably accounts for better than 90% of the polychromatic finishes—consisting of the slow-drying synthetic resin finishes and the fast-drying nitrocellulose lacquers. One large automotive plant now produces 77 different colors on its cars, colors quickly and accurately reproduced by the Test Panel Sprayer.

There are more than 100 different tints of appliance white. These and the new pastel tints are more accurately matched. Doors and bodies of refrigerators, colored and white kitchen cabinets, stoves, deep freezers and washing machines and driers are usually sprayed at different times with different batches of material.

The panel sprayer is also suited to produce accurate duplication of film thicknesses for exposure, salt spray, chemical test, etc.

[*Continued on page 50*]

The Answer to Your

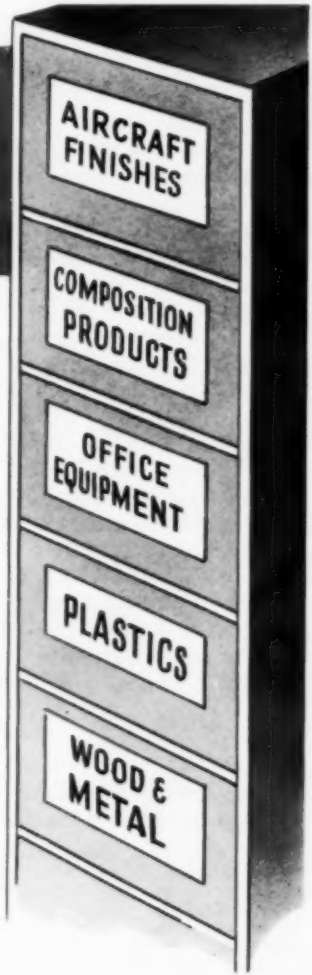
Finishing Problem

may be in our files . . .

. . . if it isn't,
let our laboratory experts
help you solve it.

Over the years, Randolph's skilled staff of technicians has earned a top reputation for solving many difficult finishing problems for a wide variety of products. Our able chemists and engineers working in completely-equipped, modern research laboratories comprise Randolph's Research Service, maintained expressly to overcome difficulties in chemical coating. If you're encountering trouble with your finishes—the answer may be in our files. If not, we'll welcome the opportunity to explore your problem in our laboratories.

Call on our Research Service for help at any time! We'll be glad to serve you —without cost or obligation, of course.



Randolph

PRODUCTS COMPANY
CARLSTADT, N. J.

LACQUERS • ENAMELS • DOPES • THINNERS

[*Continued from page 48*]

Technique of Operating the Test Panel Sprayer

The panel sprayer is placed in or in front of a spray booth. For the air-operated unit, only a hose from the main line air supply need be attached. The electric unit requires an explosion-proof electrical connection.

Any standard make of hand spray gun may be used. The gun is locked to the bracket with a thumb screw. The distance between the gun and the panel may be varied, but remains at a set readable distance until moved. In like manner, the gun height and angle to the panel may be changed when desired.

When the spray gun is directed as desired, a panel is placed on the carrier, the machine is turned on, and the panel begins to move horizontally, to right and then to left alternately, and so on back and forth at a constant speed in front of the gun. The operator depresses the trigger for one or more passes according to the requirements.

Electric units have 11 combinations of change gears for control of the panel speed, and a magnet bracket to hold the panel. The air-operated unit is driven by compressed air, instead of by an explosion-proof electric motor. The speed of traverse is read directly from a tachometer calibrated for inches per minute. The panel is held by a pair of venturi-operated vacuum cups. The air-operated unit is so light that one man can lift it from one spray booth to another.

Although these machines are designed primarily to permit duplication in coating application, they also nearly parallel hand spray procedure, the results being practically identical, and generally simulate automatic operation exactly.

Conveyorized Finishing Division Formed by M-H Standard Corp.

M-H Standard Corp. announces the formation of a division that will specialize in the design and construction of the latest finishing techniques and equipment, with special emphasis on coating machinery, drying and baking ovens, and the most modern methods of conveyorization.

H. H. Morrison has been appointed as the technical director of this new division. Mr. Morrison is an engineer specializing in the field of industrial finishing, having developed and pioneered successful techniques, particularly in the finishing of furniture; and steel, wood and hardboard cabinets.

A conveyorized finishing laboratory, including a production Morrison grainer, has been set up in M-H Standard Corp.'s Jersey City plant (515 Communipaw Ave., Jersey City 4, N. J.). This will permit full scale application of wood grain, marbelized and other finishes to hardboard, wood and metal panels, cabinets and parts furnished by customers in their study to reduce the cost of finishing furniture, TV cabinets, appliances, paneling and other items which can now be given an excellent grain finish at a low material and labor cost.

Treating Rusted Surfaces

A 4-page folder describes how Ospho, when applied directly to rusted metal, chemically changes rust to iron phosphate, thus preparing the surface for regular maintenance paint. It also tells how Ospho provides a good bond between new metal and paint. A copy is available from Rusticide Products Co., 3125 Perkins Ave., Cleveland 14, Ohio.

For more data, circle 17 on colored card.

SINCE NIKOLAS 1890

Quality Finishes

FOR DEPENDABLE FINISHING

- **CLEAR LACQUERS**
  Metal, Plastic, Wood
- **WATER DIP SYSTEMS**
- **ENAMELS**
  Airdry or Baking
- **SIMULATED COATINGS**
  Brass, Copper, Gold, etc.
- **EPON or SILICONE FINISHES**
- **NOVELTY FINISHES**
  Crackle, Hammer, etc.

QUALITY THAT SPEAKS FOR ITSELF

No matter if your product is sold for a few cents or thousands of dollars, to have eye appeal that product must have a satisfactory appearance to stimulate the desire to purchase.

The ultimate finish, whether decorative or protective, is normally the least expensive part of the item.

Why jeopardize the reputation of your product with inferior finishing materials when quality products cost no more to use.

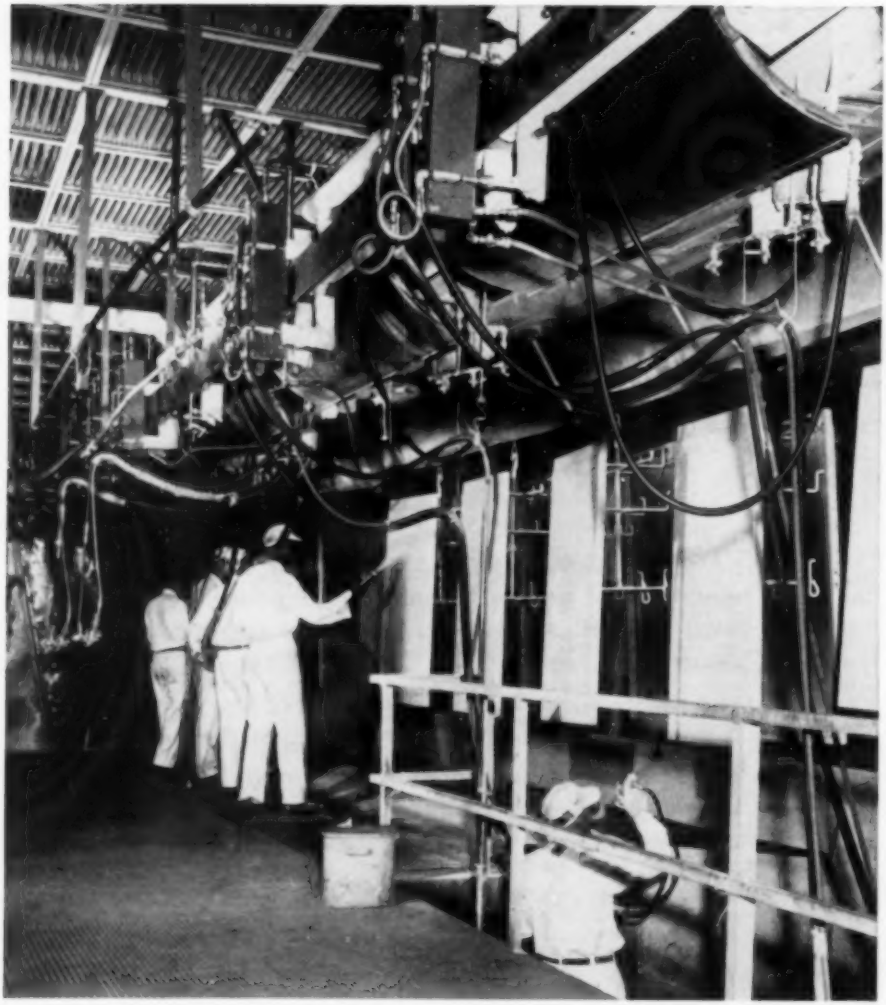
WRITE — WIRE — OR CALL

G. J. NIKOLAS & CO., INC.

Manufacturers of Finest Lacquers Since 1890

2850 WASHINGTON BLVD., BELLWOOD, ILL. • 33 GRAND ST., BROOKLYN 11, N. Y.

$75,000 a year saved...



Refrigerator doors are sprayed in DeVilbiss water-wash spray booth—one of eight such booths in this modern plant. A battery of DeVilbiss remote paint heaters serves the line; each station is equipped with two DeVilbiss heat exchangers and spray guns.

thanks to DeVilbiss Hot Spray

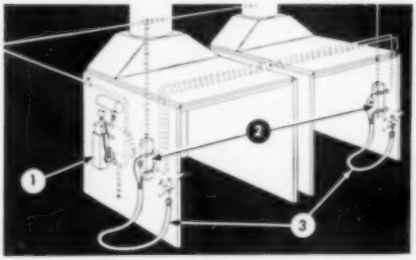
—another example of how the DeVilbiss spray method cuts material costs, reduces spray-booth maintenance

One of the world's largest appliance manufacturers has experienced important material savings as a result of a DeVilbiss hot-spray installation in its Midwest plant.

Although this equipment has been in operation less than two years, the company reports an estimated reduction in primer and enamel consumption of 10% to 15% compared to former cold-spray methods—a saving of about $75,000 annually! What's more, where spray booths once required cleaning 13 times a year, this has now been reduced to only 3 times a year—due to the reduction of spray fog.

Perhaps you, too, can profit from DeVilbiss hot spray. This method offers smoother finishes with less shrinkage; heavier film build; faster drying; and lower spraying pressure with minimum overspray!

Call your nearest DeVilbiss branch office today for complete details. Or write direct.



DeVilbiss hot-spray system is foolproof; adapts to multiple gun hook-ups. Hot water from master heater ① heats paint in exchangers ②; heat-jacketed hose assemblies ③ keep paint hot right up to guns, assuring uniform viscosity at all times at each gun.

THE DEVILBISS COMPANY
Toledo 1, Ohio

Barrie, Ontario • London, England
Offices in Principal Cities

FOR BETTER SERVICE, BUY
DEVILBISS

Automatic Parts Washer at FORD MOTOR CO. PLANT

By Emil J. Frundel
C. A. Dauer Co., Inc.

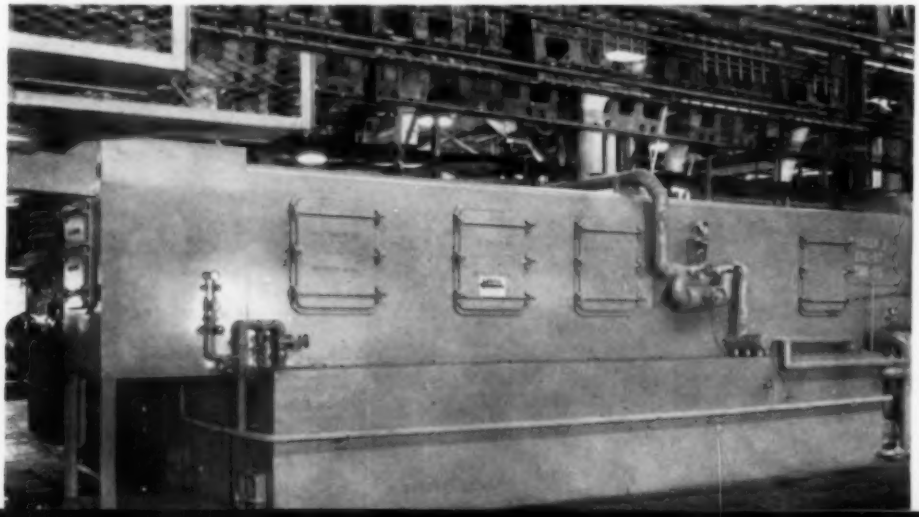
The use of specially designed work holders, each one holding as many as 23 items, helped to solve a very difficult cleaning problem. The equipment was set up and thoroughly pre-tested in the supplier's plant before it was installed at Northville.

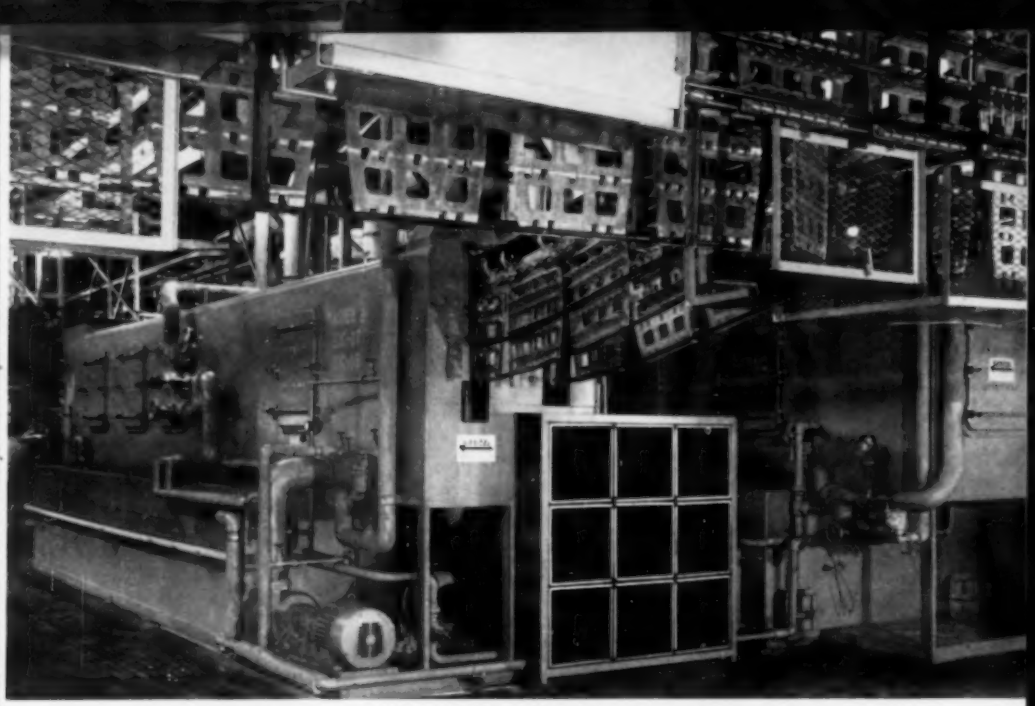
SOME OF THE country's leading metallurgists said this operation could not be done with a metal parts washer. However, with the cooperation of Ford Motor Co.'s engineers, of the Equipment & Material Handling Section, Engine & Foundry Division, the C. A. Dauer Co. designed, fabricated and installed two metal parts washers. The purpose of these washers was to thoroughly clean and blow-off all possible trace of moisture from the exterior surfaces of valves after finish grinding and prior to aluminizing.

These washers handle Ford, Mercury and Lincoln valves. One washer was designed to handle the steel

This is a side view of the exhaust valve washer. On this entire side is the wash section complete with an easy accessible "Tri-fold" extended tank: 1) For pump suction; 2) For plate steam coils; 3) For testing concentration and for filling soap compound.

Note the self-contained indicating control valve on steam line to coils with the proper valves on each side of same and a valved by-pass—both for easy maintenance.





Here are end views (open and closed) of the two washers side by side. At center you see entrance and exit of the washer that cleans exhaust valves. At right is the "turn-around" or closed end of the washer that cleans intake valves. You don't see the valves clearly, but you see the work holders, each of which has three tiers of slots to hold a total of 23 valves—eight each in the two upper tiers and seven in the lower tier. The nine squares (lower center) are air filters for filtering room air.

intake valves and the other was designed to handle the cast-austenic steel exhaust valves. Production is approximately 2400 valves per hour.

The material handling system includes a monorail type conveyor having magnesium alloy carriers with attachments spaced properly apart from one to another. Each carrier or work holder is designed to have three tiers high and accommodate a maximum of 23 valves each, all held in a vertical position with the valve head up.

Two Double-Pass U-Type Conveyorized Washers

Each washer is a double-pass U-type monorail machine consisting of an entrance vestibule, hot alkali wash section, drain section, hot water rinse section, drain and exit vestibule, washer gap, and a blow-off section. The overall approximate dimensions of each washer is 32-ft. long, 8-ft. wide and 7½-ft. high.

Several important production considerations entered into the original design of this installation:

1) Existing production had to be maintained.

2) Area accessibility was at a premium.

3) Limited field time would be available to overcome trial and testing corrections.

4) Critical maintenance accessibility was essential. [*To page 56*]

The concern that designed and built these metal parts washers made up two complete "package" units which were pre-tested in its own plant, before shipment. In coordination with Ford Motor Co. personnel, running changes were made at the washer manufacturer's plant, which assured close compatibility to existing production when delivery was made.

These two washers have been operating successfully for about one year at Ford's Northville, Michigan plant—and providing tremendous savings in operating costs.

O'Brien Corporation, Host to Visitors, Friday, Sept. 26

The O'Brien Corporation, manufacturer of a variety of paint materials, held open house for about 300 invited guests during the afternoon of Friday, Sept. 26. Each visitor was handed a large brochure entitled O'Brien Paints (22 pages, 8½x11-in., illustrating the plant), a small colorful brochure on O'Brien Symphonic Colors of the Year (16 pages, 5x6¾-in.) and a program, "Welcome to O'Brien Paints Open House."

Groups of visitors were taken through the entire plant where everything was explained by guides. The laboratories were especially interesting, as here many kinds of facilities and equipment were available and in use to test incoming raw materials, and to make various tests on O'Brien paints and coating materials.

In addition to its extensive and modern manufacturing, inspection, packaging, labeling and shipping facilities, the company had on exhibition typical products of several of its industrial customers—automotive finishes, can linings, high-heat resistant coatings, hammer-effect enamels and paints for a variety of metal parts and products including castings and sheet metal. Also, excellent finishes for architectural woodwork, plywood, cabinet work and furniture.

At the end of the tour, refreshments were served and visitors had opportunities to meet and talk to more of the plant personnel. It was an enjoyable and educational occasion for every one of the visitors.

At the O'Brien Open House celebration, gold watches were awarded to 11 employees who have completed 25 years of service with The O'Brien Corporation, South Bend, Indiana. First Row: Jerome J. Crowley, President of The O'Brien Corp., Clement L. Gorski, Michael J. Horbath, Delbert L. Turney, E. J. Roberts, F. E. Aitchison, L. G. Vargo. Second Row: A. B. Zakrewski, R. H. Morris, M. C. Call, A. L. Landry and H. S. Snyder.

fostoria RADIANT HEAT SYSTEM

radiant heating news

to help manufacturers improve production operations

Why is INFRARED more productive than convection heating methods?

The excellent savings in time, money, space and manpower being obtained by users of radiant (infrared) ovens, compared with convection heating, can be traced to the basic differences between the two methods. It is largely the following fundamental differences which make infrared far superior in production heating operations:

CONVECTION HEATING

. . . is indirect

Convection heating—regardless of fuel used—is indirect heating. Like the housewife who bakes in a gas range at home, industrial users of convection heating must first heat the *oven* before the product can be heated. So heating is delayed while product being processed absorbs heat from the heated atmosphere surrounding it.

. . . is slower

Since energy is not transmitted directly to the product, in heating by convection, processing is necessarily much slower than by infrared process. Each product placed in convection oven must wait until surrounding air is adequately heated before it can absorb heat to desired temperature.

. . . wastes valuable heat

Escape of air must be limited to obtain efficient heating in a convection oven. On the other hand, most industrial applications also require an adequate *removal* of air to eliminate dangerous volatiles—particularly in paint baking. So we have a peculiar contradiction in principles: You must let air *escape*—even though it carries costly heat with it.

. . . requires air turbulence

Convection heating also requires the hot air to be constantly *moved* around the product, so heat can be absorbed. This often deposits dust and combustion particles on the product's surface. Special ventilating and filtering systems often must be used when an unmarred finish is demanded.

INFRARED HEATING

. . . is direct

Radiant energy heats any object *directly*, without heating the air in between the infrared source and the product being heated. (Like the sun's infrared rays melt snow on cold days.) The product does not have to take heat from surrounding air. This high radiation efficiency saves time and effort, because production heating begins immediately.

. . . is instantaneous

The moment your infrared heat is turned on, heat is transmitted to the product. No warm-up period is required. Desired temperature is obtained without delay, without wasted heat, thus enabling you to turn out more finished products in less time and at lower cost.

. . . is more efficient

In an infrared oven you need only admit and exhaust enough air to reduce concentration of volatiles. Volume circulation of air is not required, so little heat is lost. Carefully controlled movement of air does not reduce product temperature, so higher heating efficiency is obtained. Maximum heat is squeezed out of every KW used in radiant heating.

. . . minimum air movement

Since there are no products of combustion in an infrared oven, an minimum air movement, there is little chance for the finish to be marred by foreign matter. Rejects are therefore minimum. Maintenance costs go down. Product quality is increased. Profits are greater.

GET "RADIANT HEAT—APPLICATIONS UNLIMITED"

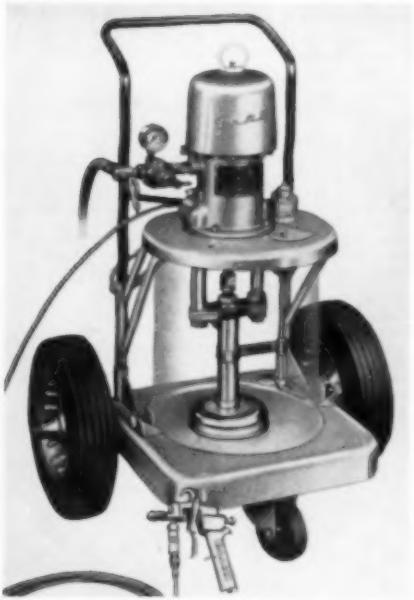
Free Book on Infrared

Benefits, cost-savings, and typical applications of infrared—with full description of this modern, versatile process—is contained in this 20-page book. Write for a free copy. We will gladly include recommendations in our reply if you send us production data and heating requirements. Address Dept. I021.

THE FOSTORIA PRESSED STEEL CORPORATION • Fostoria, Ohio

The Hydra-Spray Process of applying paint materials

By John P. McAdams
Gray Company, Inc.



Portable Hydra-Spray equipment for 5 and 10-gallon size containers of material to be applied by spraying.

THE IDEA of a spray system by which you could atomize and apply protective and decorative coatings without compressed air as a propellant and atomizing agent has been speculated upon for many years . . . . Recent developments in metallurgy, ultrasonic lapping techniques and new chemical materials have enabled our company to produce a new and revolutionary spray system known as the Graco Hydra-Spray process. This important development represents the result of years of applied research in several industries; it is designed and produced as a commercial product for immediate use in industry.

Hydra-Spray—Hydrostatic or Hydrodynamic Pressure

Hydra-Spray gets its name from the principle involved to obtain atomization of the fluid being sprayed. Successful spraying is accomplished by the release of high hydrostatic pressures (or hydrodynamic pressures if you prefer) in the same manner that you can force water to atomize into a fine spray by adjusting the nozzle of your garden hose. This hydrostatic atomization of water can be done at low pressure (10 to 30-lbs. per square inch) because water has a relatively low viscosity when compared with most paints and protective coatings. For this reason the Hydra-Spray uses higher pressures.

Conventional pump-fed and pressure-tank-fed air spray guns use pressures in the 20 to 50-lbs. per square inch range, while the Hydra-Spray uses pressures in the 1000 to 2000-lbs. per square inch range.

In this system, compressed air drives the pump, but it doesn't spray the paint. No compressed air reaches the spray gun; only thing that's fed to spray gun is paint under high pressure.

This high pressure is obtained from a reciprocating, double-acting air motor that is mechanically coupled by a connecting rod to a reciprocating, double-acting pump. The pump unit is capable of multiplying the fluid (paint) pressure to 20 times the air pressures admitted to the air motor through an adjustable regulator. Air pressures used to operate this system may vary from 50 to 80-lbs. per square inch, with approximately 5-cu. ft. per minute of air required to operate the air motor for each spray gun that is in continuous operation.

The coating material (paint) under high pressure, and at ordinary room temperature (without heating) is transferred directly to the spray gun through a ¼-in. inside diameter, stainless steel, wire braid hose which has a solvent-resistant "Teflon" liner.

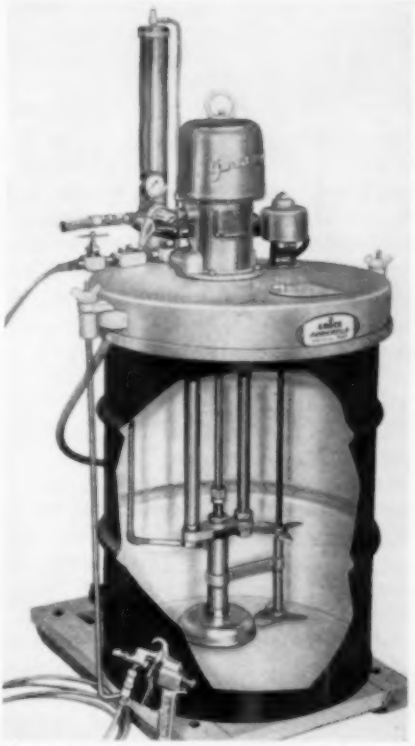
Spray Tip Used Governs Angle of Fan-like Spray

The spray gun feels like and looks like a conventional air spray gun, except there is no atomizing air hose connection. Neither is there a fan adjustment or air cap on the fluid tip. Fan adjustment is obtained by a selection of different fluid tips, which have various fan angles of the spray pattern.

SPRAY TIPS

Model No.	Orifice	Spray Angle
162-409	.018	80°
162-410	.018	65°
162-411	.015	65°
162-412	.015	15°
162-442	.015	40°
162-698	.011	50°
162-736	.013	25°
162-737	.011	65°
162-738	.013	80°
162-739	.015	80°
162-740	.021	80°
162-765	.011	15°

[*Continued on page 60*]



How Hydra-Spray looks on 55-gallon drum.

[*Continued from page 59*]

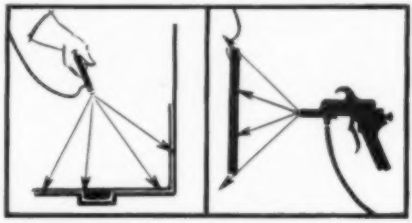
Tungsten carbide is used in all spray tips to resist the extreme abrasive action of paint pigments being forced through the nozzle at high speed and under high pressure. Hydra-Spray utilizes the release of high pressure energy through a small orifice, to create extremely high velocity, which is dissipated in the atomization of the fluid stream into millions of finely atomized paint particles. These particles of paint fly to the work target in a well defined pattern created by the nozzle. There is no "bounce-back" and overspray, but a uniform deposit of all of the atomized paint particles that are aimed directly at the target. As a result, products can be spray painted in areas where no paint fog or overspray would be permissible.

By this method of spraying, practically all coatings which fall within the viscosity range measurable with a Krebs-Stormer viscosimeter may be sprayed at the high production rate of about 0.3 gallons per minute (18 to 20 gallons per hour continuous spraying).

Thick coatings can be applied when desired. Paints with a viscosity of 72 KU have been sprayed onto metal surfaces at coating thicknesses of 3 mils (0.003 inch) dry, with a single coat consisting of two passes—one verical and one horizontal. Coating thicknesses in excess of 6 mills (0.006 inch) dry, may be applied with the same material in two coats. This feature is of great importance in those applications which call for thick coatings. The possibility of using higher viscosity coating materials permits the application of uniform films with no "pin holing" and with good flow-out characteristics.

Equipment Fits Into and on Container of Material

The equipment is compact and is capable of agitating paint in the original container, with a rotary air-powered agitator. Material is pumped directly from the drum (Hydra-Spray is available in sizes to fit 5 and 10-gallon pails or 55-gallon drums) to the spray gun through a single fluid hose. The use of one small hose to the spray gun permits added flexibility of movement, and light weight for the operator to carry in his hand. Since there is no need to balance atomizing air pressure against fluid pressure, the adjustment of this spray system is quite simple.



There is no bounce-back, overspray or fog.

The volume of compressed air required to actuate the pump, which produces the pressure used in spraying, is the only air needed for operation after the spray material has been agitated. The volume that will be used is about 5-cu. ft. of compressed air per minute per spray gun. That is, if two spray guns are supplied by one pump, then the consumption of compressed air would be about 10-cu.

Custom-engineered to give uniform viscosity and color—*constantly!*

● Uniformity in viscosity and color is what you get at every spray outlet with a paint circulating system custom engineered by GRACO!

In the famous GRACO "two-pumps-per-color" system, illustrated above, one air-powered pump supplies the system "direct-from-the-drum" while the second Powerflo pump prepares the standby drum thoroughly, for instant changeover. You supply multiple spray guns uniformly, economically, even at a considerable distance . . . and all without pressure in any of the drums!

The result? Viscosity and color are uniformly maintained because paint is continuously being circulated. Strict quality standards are easily met because paint quality checks and corrections can be made in the original drum. In addition, this GRACO system means reduced handling of paint, savings in time and labor and improved plant housekeeping.

GRACO can custom engineer the best system for your particular operation. Find out now how low the cost, how high the return can be!

GRACO

GRAY COMPANY, INC.
103 Graco Square
Minneapolis 13, Minn.

Air-Powered "Direct-From-Drum" Pumps

Factory Branches: New York (Long Island City), Philadelphia, Detroit, Chicago, Atlanta, Houston, San Francisco

Sales Offices: Washington, Toronto

Write FOR GRACO POWERFLO CATALOG!

ft. per minute. This is very low, as I believe everyone will agree.

In most instances, where as much as ten gallons of paint are used per day with Hydra-Spray, it is expected that full amortization of the equipment cost may take place in as short a time as six months. This fast amortization is possible by savings in the cost of paint through the absence of overspray.

Maintenance Cost is Low; Paint Any Size, Anywhere

Maintenance cost for this equipment is low due to the high quality built into the various components. The pump is powered by the long tried and proven "Mogul" air motor. Hardened parts in the pump resist wear. The hose of stainless steel, with "Teflon" liner, is expected to give long service. Simplification of design is a factor in maintenance costs, since this system of spraying uses only one air regulator (to control the pump) and a material hose.

Due to the fact that there is so little overspray with this system of spray painting, the ventilation, air exhaust and air replacement facilities—and the loss of heated room air (through exhaust) during cold weather—are not great problems. Of course, because of the solvents that escape into the room during spraying, some movement of air must be provided through one or more exhaust fans, and some provision must be made for bringing in clean heated air to replace the exhausted air.

Hydra-Spray painting makes it easily possible to paint large objects by spraying — objects which, because of their size, shape, structure and/or weight could not be readily moved to or spray painted in any type of spray booth. For example, a large machine or some piece of bulky equipment can be readily spray painted in the room or space where it is finally assembled. Busses, trucks, trailers, railway cars, and large boats can be sprayed inside or outside a building without "fogging up" the vicinity.

Although many features of the Hydra-Spray process represent welcome simplification, there are some new techniques to learn in order to make the equipment operate at its best possible efficiency. For example, the adjustment of air pressure to the air-motored pump ultimately controls the fluid pressure at the spray gun. This pressure must be kept within a reasonable workable range, and a little on the low side when possible. The correct pressure may be determined by a few trial adjustments and by careful examination of the spray pattern. Too high a pressure tends to build up too heavy a coating thickness at the middle of the spray pattern, whereas too low a pressure tends to cause "pigtailing" or the separation of spray pattern near the top and bottom of the pattern.

The coating thickness of a properly adjusted Hydra-Spray pattern is almost uniform from top to bottom. It feathers out slightly at the extreme edges, therefore adjacent spray passes will need to overlap only a little to produce a "solid" coating of uniform thickness.

Beauty and convenience help to make a product really desirable.

What! A metal-cleaning expert? Who needs one?

You do...and here's why!

The sole function of your Wyandotte Industrial Service Representative is to help *you* in your metal-cleaning and metal-finishing operations. He is trained to show you how to use Wyandotte products most effectively — and how to cut costs at the same time!

Sound like a big order? Well, it is! But remember, your Wyandotte Industrial Service Representative is highly specialized — and his technical files bulge with knowledge gleaned from many years of coast-to-coast experience *in all phases* of metal cleaning and finishing!

What's more, your Wyandotte expert has all the advantages of product know-how and chemical research at his fingertips. This assures you of getting the very best product and the most "mileage" for your money!

So, you see, with Wyandotte you get the finest in chemical products, capable technical service backed by extensive research, and unequaled experience in metal finishing. This combination means BETTER RESULTS AT LOWER COST!

Arrange a date with your Wyandotte Industrial Service Representative, today. *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Also Los Nietos, California. Offices in principal cities.*

Wyandotte CHEMICALS J. B. FORD DIVISION

THE BEST IN CHEMICAL PRODUCTS FOR METAL FINISHING

Above: With a steady flow of two enamel colors always available, production has been more than doubled. Down time for color changes and enamel replenishment has been cut 40%.

For left: Binks air-operated pumps send enamel direct from 55-gallon drums to adjacent spray booth. Binks DUALHEET paint heaters, being inspected, raise enamel to 140° F. This lowers viscosity and reduces need for thinners.

Left: Metal assemblies start 3-stage phosphatizing operation in the Mayville, Wisconsin, plant.

AT MAYSTEEL, BINKS SPRAY UNITS HELP

boost phosphatizing, priming and painting production by 200%

"Maysteel Products, Inc., produces sheet metal parts and finished products on contract. As part of our expansion program we needed a modern finishing system that would produce quality work on tight schedules. To help us solve the problem, we called in Binks," reports Maysteel's president, Mr. C. E. Stryker.

Complete finishing system

METAL PREPARATION: A three-stage conveyorized phosphatizing system was developed employing 384 Binks stainless steel spray nozzles. The nozzles completely bathe the metal parts in chemically treated water, wash water and chromic acid rinses. Materials are reclaimed and recycled.

METAL PRIMING: Continuing on the conveyor, parts pass through a drying oven into a 22′ water wash spray booth. A Binks circulating system supplies primer to two painters using Binks Model 7 spray guns.

ENAMELING: After another oven drying, the parts are ready for a coat of hot spray enamel in a second water wash spray booth. Up to five painters using Binks Model 7 spray guns are supplied by a two-color circulating system. Binks Dualheet paint heaters, located just outside the booth, raise the enamel to 140° F. This eliminates the need for thinners and insures full-coat coverage in a single pass.

Engineering assistance available

Learn how Binks extensive finishing experience and equipment can be of benefit to you. There is no obligation. Just contact your nearest Binks Branch Office or, if you prefer, write direct to the address below.

Ask about our spray painting school
Open to all... NO TUITION... covers all phases

Binks
EVERYTHING FOR
SPRAY PAINTING

VISIT BOOTH 1501

National Metal Exposition & Congress
Cleveland, Ohio, October 27-31

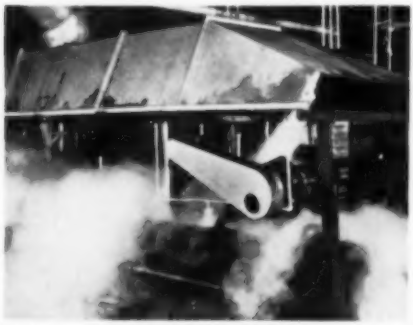
See Modular Electrostatic Spraying and memory-controlled automatics

Binks Manufacturing Company
3116 - 40 Carroll Ave., Chicago 12, Ill.

REPRESENTATIVES IN PRINCIPAL U.S. & CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY

Put Out Dip Tank Fires Automatically

AUTOMATIC carbon dioxide systems provide round-the-clock protection against dip tank blazes. At the first flick of flame, rate-of-temperature-rise fire detectors (or in some cases, fixed temperature thermostats) trigger nearby cylinders of carbon dioxide. The pressurized gas floods from its containers and passes to the tank where it is discharged from Multijet nozzles across the surface of the flames in sufficient volume to reduce oxygen to a degree insufficient to support combustion. The fire is snuffed out in seconds. In addition, the cooling action of the dry ice gas tends to lower the temperature of the tank's contents, thereby minimizing the possibility of a re-flash.



Carbon dioxide, released automatically (or manually) puts out a dip tank fire quickly and safely; leaves no mess to clean up.

Normally, pull boxes are included in an automatic system to permit it to be manually operated. If desired, a reserve bank of cylinders can be installed to take over the guard duty while the primary bank is being discharged. Finally, the system can be engineered to protect several hazards from one central bank of cylinders.

Carbon dioxide, in addition to being an efficient fire extinguishing agent, is a non-conductor of electricity. Being a dry inert gas, it cannot damage motors, contaminate liquids, nor cause "boil-overs." Eventually it dissipates into the atmosphere, following discharge; it leaves no mess to be cleaned up.—*Walter Kiddie & Co., Belleville, New Jersey.*

Multi-Color Electrostatic Spray System By Ionic Corp.

Development of the first centrifugal type "Multi-Color" Electrostatic Spray System is announced by Mr. John Sedlacsik, Jr., President of Ionic Electrostatic Corp. of Garfield, N. J.

This new system, designated as Model M-50, is adaptable for producing both single color and multi-color patterns or finishes. The system utilizes an array of variable speed electrostatically charged centrifugal atomizers which blend coating materials to produce various types of multi-color mixed patterns previously unobtainable. Reciprocating and stationary models are available.

The new system will be on display from October 27th through October 31st, in Booth No. 2502 at the forthcoming National Metal Exposition in Cleveland, Ohio. Mr. John Sedlacsik, Jr. and several of the corporation's engineers will be in attendance to answer any specific questions pertaining to the new system.

Saubestre Joins Enthone, Inc.

Edward B. Saubestre has joined Enthone, Inc. of New Haven, Conn., a subsidiary of American Smelting & Refining Co., as Assistant to the Research Director. He will assist Dr. Walter R. Meyer, President & Research Director, in expanding Enthone's research and development program.

New Bulletin Shows Buffs

A new 12-page bulletin describing a complete line of cutting and coloring buffs is offered by Hanson-Van Winkle Munning Co., Inc., Matawan, N. J.

For more data, circle 18 on colored card.

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Curing

AIR REPLACEMENT SYSTEMS **CONVEYORS**

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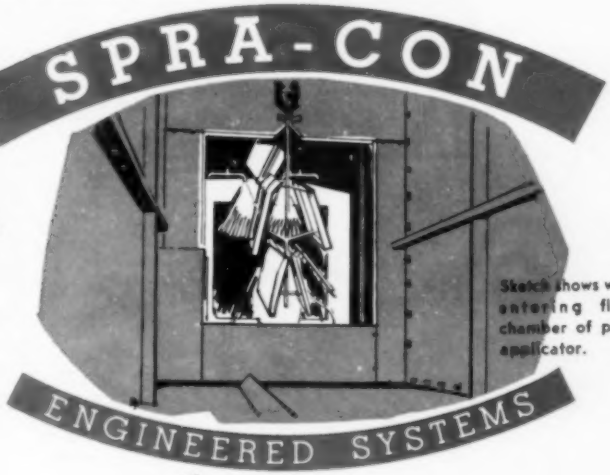
Describes and illustrates many installations of Spra-Con Complete Paint Finishing Systems.



Sketch shows work entering flood chamber of paint applicator.

the
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Painting Pump Housings Faster, More Efficiently

By L. D. McClanahan
General Foreman, Pump Division, Bowser, Inc.

MODERNIZATION of our finishing department with a conveyorized setup, electrostatic spray painting, and a new oven, enabled us to meet increased production demands in producing gasoline pumps for a number of the present major and independent oil companies.

Bowser, Inc., Ft. Wayne, Ind. Division, turns out something like 1000 pumps a month. These include numerous models, such as dual product, single product, high speed, regular models, remote control units, etc. Increased production demands in 1957 made it necessary to do something about the

bottleneck in our painting department. In addition to the Bowser line, we produce pumps for many customers, each painted in specified identifying colors.

Paint Preference Varies According to Customers

Each customer furnishes painting specifications; and all in all, there are more than 300 separate colors involved. Various combinations run the color total up to over 900. Five or six color changes a day are common in our production.

Formerly, our pumps were hand sprayed in three spray booths. Painted parts then were racked on a truck and pushed by hand into a steam-heated oven. It was a slow process. Peak production was about 150 units a day, while now we can turn out twice as many with less labor and less stock piling.

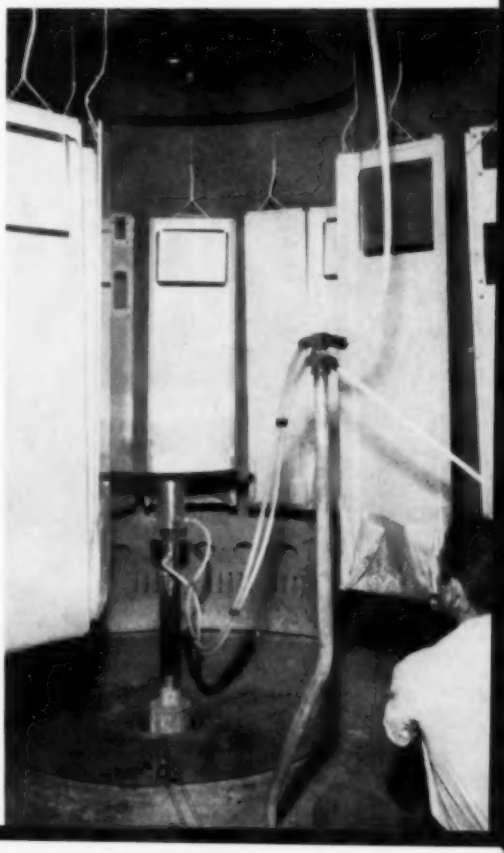
We Changed to Electrostatic Without Work Interruption

The advantages and benefits of electrostatic spray painting were first proved on our products in the Ransburg laboratories. Another company handled the conveyor and oven installation; and the change-over to a conveyorized system with electro-spray was accomplished in a week, without the usual work interruption. During the change-over, we did some painting at night, and worked around the installers during the day.

Under our present production procedure, we build, paint electrostatically, test, assemble and ship within two days from the time orders are received in production. It would have been impossible to meet these demands without going to three shifts with our former hand spray setup. Today, one shift handles our increased production where formerly we used two shifts. It's a much cleaner operation too, for maintenance in the paint area has been reduced 50%.

Parts to be painted are hung in proper sequence on the line to facilitate assembly. One set of parts,

Gasoline pump housings and parts are uniformly painted as the conveyor makes a loop around the reciprocating whirling disc from which atomized paint is released. One gallon of paint now coats seven complete sets of pump panels and parts. By the former hand spray method, only four sets were painted per gallon.



for instance, for a Bowser pump includes two side panels, 11x50-in.; two front and back housings, 20½-in. wide by 54-in.; top housings, which are hung four to a fixture; 7-in. diameter cover plates, which are hung 14 to a workholder; and the housing doors, which are mounted into the side panels.

Results: Greater Production, Better Paint Mileage

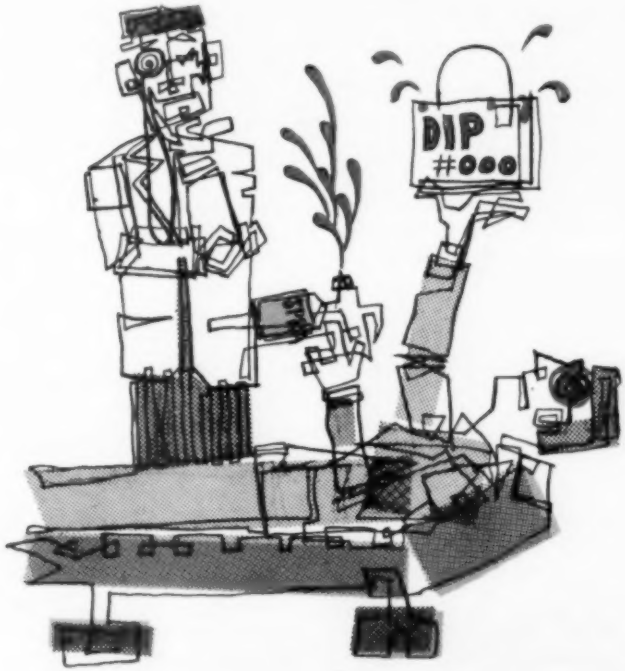
Now, with one No. 2 Process electrostatic painting unit, with a reciprocating disc, it's possible to paint—in one hour—55 sets of housings and parts which go into the pump units. Formerly, with hand spray and limited oven facilities, we could turn out about 15 sets per hour. We're getting much better paint mileage today. By the former method, we painted four sets per gallon; now we paint seven sets per gallon, a 75% increase.

Before making the change we sanded down the housings before applying the finish coat. We've eliminated this step now, for the uniform electrostatic application makes it unnecessary. And, since no compressed air is used in our painting operation, we have better dust control.

Unpainted pieces, already formed, come either from our own fabricating or, in some instances, from vendors. First they go through a 6-stage cleaning process. This includes a commercial cleaner, an alkaline hot cleanser, a hot rinse, phosphatizing treatment for rust proofing, a hot rinse and a chromate fix.

Our 286-ft. long conveyor operates from 5-ft. to 8-ft. per minute. Parts are hung on 16-in. or 32-in. centers, depending upon their size. First they go into a hand touch-up spray booth, where some are paint-

Panels for two or three-color jobs are masked; then hung on conveyor for finish coat.



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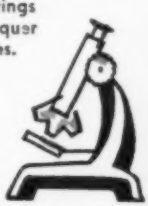

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Patent #2,658,002 exclusive owners for the manufacturing of MULTAKOLOR . . . . a division of United Lacquer.

After we put in an electrostatic painting system and conveyor line, we could paint, in one hour, 55 sets of housings and parts for gasoline pump units. Before, we turned out only 15 sets per hour. Now we get 75% more coverage from every gallon of paint.

ed in certain recessed areas. Then, they move into the electrostatic spray area, where one floor-mounted, reciprocating disc applies the primer coat. The disc is 25-in. in diameter. If the color run warrants, parts stay on the line after the prime coat has been baked; paint is changed and the finish coat is applied in the same manner. Indexers on the conveyor line in the electrostatic spray area turn the parts to coat both sides. After painting, the parts move into a gas-fired oven where they bake out at 300° F. for 15 minutes.

Masking is removed from pump housing before painted parts enter oven for final bake.

Some Housings in 3 Colors; Uniform Film Thickness

Where production calls for multicolored pumps (some housings are produced in three colors), parts are removed from the line after priming and masked before the finish coat is applied. Beauty and durability of Bowser products depend a great deal on the quality of the coating.

Gasoline pumps must be durably coated to withstand all kinds of climatic conditions. The electrostatic process makes it easy for us to control our paint film thickness to within ½-mil over the entire work area. Length of the reciprocating stroke is easily adjusted to meet our varied requirements. This is especially helpful in the two-toned units. We use from a 20-in. to a 53-in. stroke, depending upon parts being painted.

Modernization of our finishing department is typical of the Bowser business philosophy as expressed by our President, Mr. Paul E. Ganz. That is: "Improved manufacturing methods mean better products can be made in larger quantity at more competitive

KADMOID eliminates $2,298,000 warehouse at Goodyear Rim Plant

Thanks to the established protective quality of the Kadmoid finish used on these tire rims, the Metal Products Division, of The Goodyear Tire and Rubber Company, Inc., Akron, stores acres of rims under acres of sky . . . in all kinds of weather. No costly building is needed to guard this vast warehousing area against snow, sleet, rain or sun.

Another vitally important point . . . field records prove that the Kadmoid baking finish far out-performs the zinc plating previously used, keeps Goodyear rims the world over looking better, longer . . . and at far less cost.

Such unusual savings are typical with Kadmoid . . . because Kadmoid is extremely tough and durable, and offers peak resistance to salt and other chemicals. It's ideal for use where maximum protection is essential.

May we tell you more?

**Kadmoid is the finish Goodyear advertises as Bond-a-Coat.*

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prices. This means increased sales —and employes in the plant where manufacturing processes are kept modern have more security in their jobs. The number of jobs increases and opportunities for individual employees become greater."

Acknowledgment: Some of the photographs and material for this article were supplied by Ransburg Electro-Coating Corporation.

Finishing Furniture of Cold-Rolled Steel

USE OF COLD rolled instead of hot rolled sheet steel has reduced costs and simplified every fabricating operation in the production of steel office furniture by a well-known manufacturer. As a result, in this company's plant, hot rolled steel is no longer used for any part. Even the heavier gage reinforcing members—drawer suspensions and supports, angles, channels and brackets, which do not require a fine finish or appearance — are now fabricated of cold rolled steel.

"Cold rolled steel cuts better, forms and draws better, welds better, and finishes better than the hot rolled steel we formerly used for many components of our furniture," according to John M. Windahl, chief product engineer for Corry-Jamestown Mfg. Corp., Corry, Pa. Furthermore the superior flat surfaces attainable with cold rolled steel contribute much to the fine appearance of Steel Age desks and files, he said.

There are good reasons for these advantages, ac-

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cording to metallurgists of Jones & Laughlin Steel Corp. The principal factors contributing to easier fabrication are finer grain structure, greater ductility, and hardness. The lower pressure required for cutting this steel makes cutting tools and blanking dies last longer.

The more uniform grain structure and ductility also provide better forming and drawing characteristics. The best example of this is in the round corners formed on end panels of desks. These corners, which have a radius of 13/16-in. in one direction and 1⅜-in. in the other direction, can now be made with the commercial grade of cold rolled sheet without splits or notching.

Because of the fine surface of cold rolled steel, Corry-Jamestown can finish furniture with a single coat of synthetic baking enamel instead of two coats as were required on the best hot-rolled steel. The only preliminary preparation of surfaces now is washing and phosphatizing.

Greater uniformity of thickness and improved mechanical properties of light gages of cold rolled steel were also important factors in designing office furniture of lighter weight without loss of strength, rigidity, and solidity. An example of this weight reduction is the standard 30x60-in. office desk which is now at least 50-lbs. lighter. In order to use these qualities of cold rolled steel, Corry-Jamestown engineers developed improved reinforcing methods.—*From the Public Relations Dept. of Jones & Laughlin Steel Corp.*

Assistant to Pres. at Fuller

E. R. MacMillan has been appointed to the newly-created position of assistant to the president at the W. P. Fuller & Co., San Francisco, Calif. For the past three years Mr. MacMillan was in Chicago as vice-president of another company.

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Keeping profits on the boil: Can solvents meet the challenge?

Today's high standards in mass production metalworking have made metal cleaning a vital arm of production. With final operations demanding more rigid specifications and with final check-out increasingly automated, parts and pieces rejected because of improper cleaning can tie up your metal-cleaning assembly line. When that happens, costs go up, profits down. Are there solvents that can keep pace with today's high-speed, top-quality production? Here's news from Dow of an important trend that can mean better production, and profits, for the industry.

Light metals fabricator switches to Perchloroethylene

. . . cuts rejects, speeds production

A major light metals fabricator recently solved an annoying cleaning problem in its production line . . . it switched to Perchloroethylene for degreasing. Result: cleaner parts first time through, rejects and reruns cut to a minimum.

Their chief engineer says: "We had not thought of Perchloroethylene as a solvent for our cleaning line setup but when we ran into cleaning troubles on the line, our lab ran tests of Per against other chlorinated solvents. We found that particularly in the case of aluminum and other white metals we got better, reject-free cleaning and faster production because of the longer condensation time. Now we've standardized on Per".

Nationwide switch to Per. A high-placed metals-cleaning theorist recently predicted: "The odds are high that a substantial part of production-line metal cleaning will be done with Perchloroethylene in the next three to five years". Nevertheless, right from the start Per has had to combat the false economy story that goes like this: "The additional heat needed for Perchloroethylene makes the degreasing operation costlier than using other standard chlorinated solvents". Actual on-the-job performance tests have shown that, in most instances, any additional heat cost is more than offset by the savings from better cleaning.

Per wins Fahrenheit war. As metal-cleaning engineers know, the secret of Perchloroethylene's higher cleaning power is in its higher boiling point, for example, 250°F. as against 189°F. for trichloroethylene . . . a distinct advantage when removing entrapped moisture in porous metals, deeply recessed parts, and blind holes.

Although honor grades can be assigned tests of various vapor degreasing solvents, Per rates "A" in performance. As a quality performer it offers: higher stability, reduced staining, lower solvents loss, higher solvency power, longer cleaning action, and the elimination of moisture. As an added bonus it comes highly recommended for aluminum cleaning. These customer benefits put Per at the head of the class.

When the vapor trails of competitive solvent claims confuse, most metal engineers consult with a company that makes many different kinds of solvents and can evaluate them all impartially. Dow, for example, will be glad to send a copy of its new 24-page brochure "Modern Vapor Degreasing".

NEW "TRI" BY DOW

. . . helps missiles make clean getaway

Premature explosion of a rocket could be an expensive blast for everyone . . . especially the taxpayer. One of America's leading rocket builders hedged against its big birds going off half-cocked because of dirty missile hardware. A fast consultation with Dow revealed this story . . .

Today's big rockets use liquid fuels that employ an oxidizer (such as liquid oxygen) to burn the fuel. The oxidizer and the fuel are kept in separate tanks and then piped into a combustion chamber where, on contact, they explode and burn. The missile trouble-shooters found that metal-cleaning materials used had left a residue, not inert to the oxidizer. Result: premature explosion. The problem: Find the right cleaning material.

Scientists at the Dow laboratory in Texas immediately began development of a new high purity Trichloroethylene for cleaning missile hardware. They conducted pioneer shock impact tests on many different solvents; and from the data developed, created HI-TRI* (high purity Trichloroethylene) to meet the exacting requirements of the missile makers.

Dow also makes three other types of Trichloroethylene . . . neutral, alkaline, and extraction . . . for all sorts of down-to-earth uses.

Dow makes many chemicals for many jobs in the metalworking industries. If you would like to know more about them, please write THE DOW CHEMICAL COMPANY, Midland, Michigan, Chemicals Sales Department **761H-1.**

*TRADEMARK OF THE DOW CHEMICAL COMPANY

Dow Chemicals Basic to the Metalworking Industry

Chlorinated Solvents
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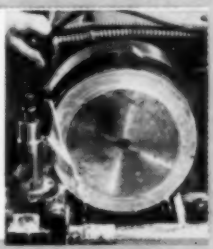
Ends machinery's "Monday morning odor". Used as a preservative in soluble cutting oil, no bad odor at the machine will develop.

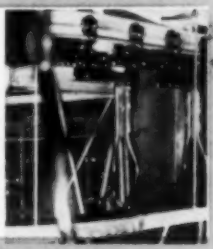


Sodium Orthosilicate

Recently improved S.O.S. by Dow is "nearly anhydrous". Metal-cleaning formulations with it cut through dirt and grease quicker than ever.

Methylene Chloride

Boil-point low, temperature high. Whenever the alloy is special and the temperature can't be too high, Dow's M.C. is the solvent of choice.



Troubles Traceable to Cleaning Process

PROBLEMS that occur in connection with various phases of industrial finishing are unique in many respects. Unfortunately some of them do not show up right after certain coatings are applied. Months may pass before film failures are brought to the attention of the finisher. At that stage it is the path of least resistance to place the blame directly on the lacquer or enamel which was used.

In finishing, many things can cause a complete, a partial or just a trace of film failure. Often the cause can be found in the cleaning or pretreatment prior to actual paint application. When failures develop after extended periods of time, it may be impossible to trace the exact cause if it happened to be the result of some isolated local cleaning condition. For example, a finisher or finishing department may be rushed and pushed to increase production.

In many plants vapor degreasers are used to remove grease and soil from the surfaces of articles to be painted. When more production is demanded, perhaps no time is allowed for cleaning the degreaser and changing the solvent. Many solvent degreasers, when allowed to go without proper care, do have a tendency to develop hydrochloric acid. In contact with steel this strong mineral acid will cause corrosion. Rust formation under any lacquer or enamel will cause rapid

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film failure. When this failure does occur, is it always possible to remember the one time when the vapor degreaser was not cleaned—particularly if this was an isolated temporary condition brought on by production pressure?

Everyone connected with finishing today realizes the importance of adequate cleaning. However, it seems that very few in the industry realize that local conditions, such as water supply, can affect the quality of finishing. In the larger urban areas, where the water is relatively free of heavy mineral content, few if any problems develop which can be attributed to water supply. Many of these cities are now adopting fluoridation. While this may not be harmful in any way, it should be investigated as to its relation to the cleaning materials used. Hard water or water containing high calcium and magnesium compounds will also cause serious problems which are not easily discernible. For example, exposure to strong acid or alkali in rinse waters may cause excessive grain growth in phosphate coatings. This, of course, would affect the adhesion of the subsequent organic top coat.

In general, cleaning for industrial finishing may not be required to as critical a degree as metal plating, but a surface, free from interfering dirt and grease, is essential to sound finishing practice.

Cleaners that produce the desired surface in one area may be completely useless in other areas. Differences in water supply and types of grease and soil to be removed are important aspects of the cleaning operation.

Unfortunately in finishing, as in everything else, when we are able to just turn a tap handle and get all the water we want, we begin to take an item like water for granted. This can be the "sleeper" which is back

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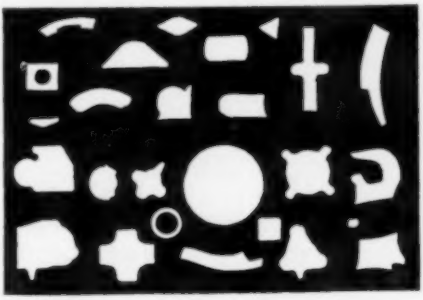

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Brady Pre-Cut Masks are self-sticking — go on fast and accurately. Protect from finishing to inspection. Hundreds of shapes and sizes in stock, for paint spraying, baking, tumbling, etc. Specials made to order. Fast delivery. Distributors in 150 cities.

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W. H. Brady Co.
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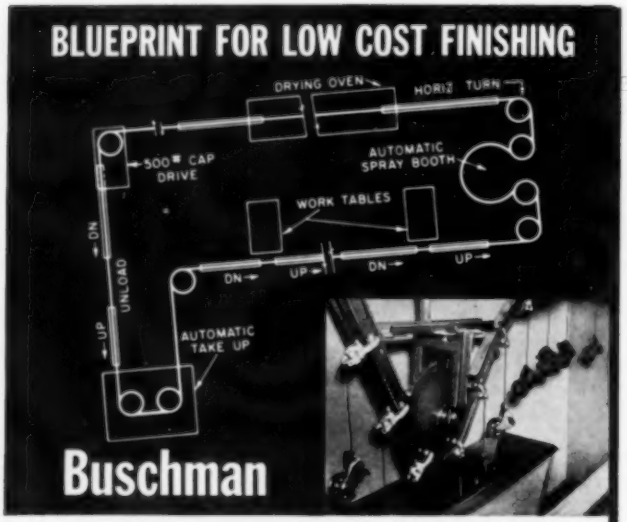
of some of our problems. Water is an ever abundant commodity but its composition and its effect on finishing conditions should never be underestimated, if production finishing problems are to be minimized.—*C. F.*

When it comes to building a permanent dealer clientele, there is no possible substitute for quality and dependability.

Hot Metal Dipped in Dry Powder . . . for Coating

A RATHER new way of applying coatings is the fluidized bed method. This process was invented in Germany and has been recently introduced into this country. The article to be coated is dipped into a fluidized bed of finely divided powder, after first being preheated to a temperature above the flow point of the powder. The powder (which can be nylon, polyethylene, vinyl, epoxy or other resins) fuses to the surface. Uniform glossy coatings of 10 to 50 mils thickness, with good coverage on projections and edges, are claimed for this process. The resins come in various colors, and a wide color range is available.

The fluidized bed just mentioned is made by passing a current of air or inert gas through a porous plate and up through a mass of finely divided powder. Under these conditions the powder acts like a liquid. The bed resembles a gently boiling liquid. A metal object lowered into the bed does not rest



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INTERLOCKING SECTIONS

Your own maintenance crew can build panels or ovens for any application easily: heating, baking, dehydrating, curing, degreasing, etc. Pre-engineered, completely wired sections of unique ceramic type lava coated infra-red generators whose temperature can be changed to any percentage of rated power without waste of current. No bulbs or sockets to burn out.

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GREENSBURG, INDIANA

on top of the powder, but readily sinks through it.

The fluidized bed process, like any process, has its limitations as well as certain merits. The heavy film thickness must be wanted. The piece to be coated must not be harmed (for example, decomposed) or distorted by being heated above the melting point of the powder. While the process is obviously suitable for metals, other materials such as glass can also be coated. It should be pointed out that nylon and polyethylene (two of the materials that can be applied by the fluidized bed process), because of their poor solubility, are not applied by conventional methods from cold solutions.

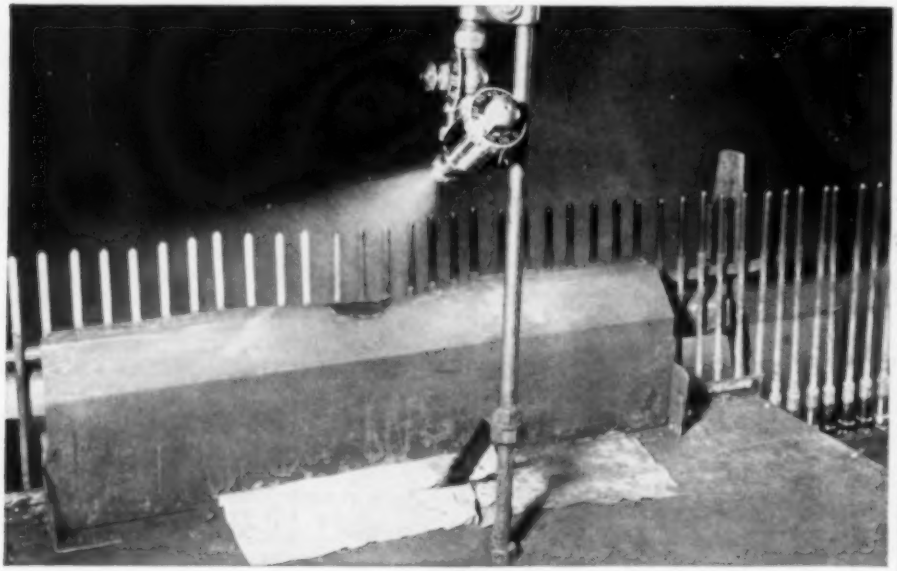
The process is licensed and the technique and necessary equipment are offered to licensees on a contract basis. Inasmuch as the process is comparatively new in this country it is still being evaluated and will be evaluated by many potential users. Their decision will determine how widespread this process will become. —*E. V. G.*

Dr. W. H. Schuette Elected a Dow Vice President

Dr. William H. Schuette, of The Dow Chemical Co. and general manager of its Midland Division, was elected a company vice president by the board of directors following the 61st annual stockholders meeting at Midland (Sept. 10). He will continue his duties as division general manager.

Incumbent officers and members of the executive and finance committees were re-elected b ythe board.

Starting his Dow career in the chemical engineering laboratory at Midland in 1941, Dr. Schuette moved to styrene monomer production and in succeeding years was associated with the production of Styrofoam, a Dow plastic foam, and Styron, the company's polystyrene plastic.



TEFLON is sprayed on line of inner barrels moving toward sintering oven at Parker Pen plant in Janesville, Wisconsin.

Du Pont TEFLON® *Finish helps*

TFE-fluorocarbon resins

This remarkable new Parker 61 pen fills itself through a special tubular ink reservoir which is coated with TEFLON. As the reservoir is removed from the bottle, ink drains off it—no mess, no wiping necessary.

TEFLON Finishes are water-repellent. Liquids drain completely from a surface coated with TEFLON. Almost nothing—liquid or solid—will adhere to it.

TEFLON remains unchanged in temperatures from 390° below zero to 480° above. Electrical properties are outstanding. And for all practical purposes, parts coated with TEFLON can be considered self-lubricating.

TEFLON is already being applied with excellent results to such varied products as transformers, paint mixers, and the interior of piping. On production-line machinery, too, TEFLON used on critical parts virtually ends shutdowns for cleaning. Machine speeds increase, output leaps as a result.

Parker's new self-filling pen is removed from ink bottle with no stain or trace of ink on barrel which is surfaced with TEFLON.

Heart of new pen is its inner barrel, which is finished in TEFLON to assure clean, safe, and consistently failure-free self-cleaning.

create new clean-filling pen

New uses—large and small—are constantly being found for TEFLON Finishes: to improve efficiency of existing products and machinery, to solve long-standing design problems, to create completely new products.

Learn how TEFLON Finishes may aid your company. Write for Du Pont's illustrated booklet and spec. sheets. No obligation. E. I. du Pont de Nemours & Co. (Inc.), Finishes Div., Wilmington 98, Delaware.

DU PONT INDUSTRIAL FINISHES

DU PONT

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

EDITORIALS

New Products May Have Surprise Merits

★ In practically any product the main selling points, from basic design to beautiful finish, are planned right from the beginning. The various merits that will be utilized to increase sales are carefully thought out before production actually starts.

But it pays to be on the lookout for the unexpected merits, too. Totally unplanned for, they may come as a surprise to any department—with finishing perhaps accounting for as many as any other division of the industry. To spot them as early as possible, and to pass the information along to the selling and advertising departments of the business may be all that is needed to put a product on the best seller list.

Recently we sat in on a sales conference. On two separate occasions the factory's representative mentioned valuable points which he said he believed had come about without any effort to pre-arrange matters that way. One example applied to an item in his own line; the other concerned a competitive line. He did not feel that either of these valuable features had been foreseen in the early stages. But a good sales point deserves attention, even when or if it is discovered purely by accident.

Every finishing department has had its share of disappointments when matters did not turn out according to the prearranged program. Such details receive comment and discussion, of course. But how often is there a continuing attempt to study completed products for the surprise "dividend" that turns up without anyone "planning it that way"? These advantages may be rare in comparison with the carefully arranged ones, but they may come to light because a finishing department foreman, someone else in the plant, or perhaps an early customer for the product has the vision and imagination to spot the unscheduled sales advantage.—*D. M.*

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

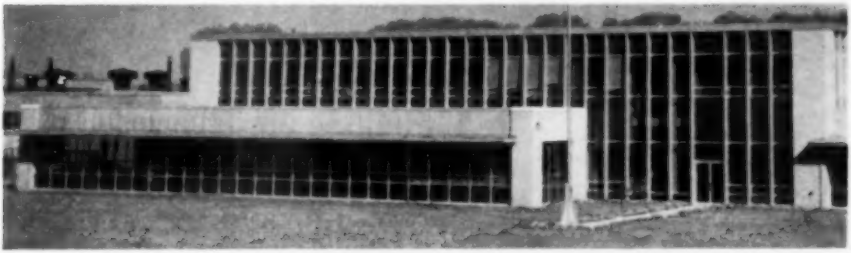
Salesmen, Answer That Question, Even if . . . .

★ To Salesmen: How many times, in the course of a sales presentation and the ensuing discussion, has a seemingly simple—and to you an elementary—question been asked?

With your complete knowledge of the subject it may sound not worth an answer or consideration. You may pass over it or just ignore it. However, do not forget that the mere raising of a question, however minor in your eyes, is full notice to you of a doubt in the customer's mind. Never leave a question or a doubt unanswered. It may not be necessary to interrupt the logical development of

Outdoor aluminum needs the protection of Half-Second Butyrate lacquers—

ALUMINUM BUILDINGS, for instance!



Clear, non-yellowing, weather-resistant coating preserves exterior of American Sterilizer Building

Aluminum is becoming one of the most widely used metals for outdoor use. But, although aluminum withstands weathering without suffering structural damage, its surface does deteriorate. Not only does it lose its luster and develop a grayish-white oxide film, but it also corrodes and pits—and these pits collect and hold dirt and grime.

The American Sterilizer Company, world's largest manufacturer of sterilizers and related hospital equipment, has solved just such a problem on its plant and office building in Erie, Penn.

Following carefully prescribed cleaning, restoring and pretreating procedures, the finish of the exterior aluminum walls of the building has been protected against a recurrence of this deterioration with a weather-resistant Half-Second Butyrate lacquer.

This clear, tough, non-yellowing lacquer will protect the gleaming finish of the restored aluminum surface for years, requiring only occasional hosing of areas of extreme contamination. The action of the rain alone will remove the accumulation of most dirt or grime.

Aluminum products used outdoors need the kind of protection Half-Second Butyrate lacquers provide. Easy to apply, economical to use, they afford excellent protection with a single coat. Many aluminum fabricators protect their products with a clear Half-Second Butyrate coating before they leave the plant. These coatings are available from lacquer manufacturers in all parts of the country. Write us for information.

A new 15-minute, 16mm. sound color film entitled "Half-Second Butyrate—a protective coating for exterior aluminum surfaces" is available without charge for viewing by those who design in, specify or use aluminum in any way as an exterior material.

HALF SECOND BUTYRATE
an Eastman film former

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; New York City; Framingham, Mass.; Cincinnati; Cleveland; Chicago; St. Louis; Houston. West Coast: Wilson Meyer Co., San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.

Eastman Chemical Products, Inc.
subsidiary of Eastman Kodak Company
260 Madison Avenue, New York 16, N. Y.

PLEASE PRINT

DATE

Please send film on Half-Second Butyrate to:

COMPANY

REQUESTED BY TITLE

ADDRESS

CITY ZONE STATE

DATE PLANNED TO SHOW ALTERNATE DATE

your sales talk, but be sure to come back to it before you finish, and clear up any and all doubts.

Quite possibly you may get that particular order; you may get the name "on the dotted line" without bothering about answering that question, but I wouldn't take the chance. Conceivably, when and if any trouble arises with your company's products at some later date, it will always be in the back of the customer's mind about his unanswered question, which you did not clarify. It was one that should have been and could have been cleared up so easily too—and your customer's mind would have been at ease, at any rate in respect to the question he asked.—*C. R. B.*

Fineness of Grind of Coating Materials

★ The buyer of paints and enamels is seldom very much interested in the fineness of grind of his industrial finishes. Apparently he assumes it will be correct. In actual practice, if the grind is not right it will almost always be too coarse—not too fine. If the grind of a glossy finish is poorer than the standard, this condition will usually show up as lower gloss. In a semi-gloss or flat finish the coarser grind may not be noticed. Primers, more than most finishes, are not ground as fine as they should be. This is because they often contain some hard-to-grind pigments, or pigments with oversize particles, and because they are usually not glossy.

Two coatings of the same composition, but ground to different degrees of fineness, may vary considerably in weather resistance and other properties. Suppose you have two batches of the same primer. Batch *A* has a fineness of *5* on the Hegman scale (which goes from 0 to 8), while batch *B* has a fineness of *7*. This means that batch *A* will have pigment particles up to 1½-mils in size, while batch *B* will have pigment particles up to ½-mil in size. If a film of 1-mil dry thickness is applied, the primer from batch *A* will have pigment particles in it larger than the thickness of the film. These particles will protrude through the film. This will not be the case with batch *B*, which will have better durability, gloss, and holdout.

The so-called grinding of pigments in a paint factory is really more wetting and dispersion of the pigments in a vehicle than true grinding. The pigment flocculates are broken up. However, there is usually little reduction in the primary pigment particle size, which is determined by the pigment manufacturer.

There is a marked trend to producing and using finer pigments, especially inert pigments. Instead of buying a talc 98½% of which will pass through a 325 mesh screen, the paint manufacturer may switch to one 99.8% of which will go through a 325 mesh screen. It will be considerably easier to achieve good grinds with the second pigment than with the first.

While most industrial finishes are ground to proper fineness, some are not. I believe that a higher percentage of finishes will be of the proper fineness ten years from now, as that is the trend today. Meanwhile the customer who needs a finish with weather resistance can make sure that each batch of his finish is properly ground.—*Howard Green.*

A good supervisor attempts to work with his people, within the framework of their wants and needs. A good supervisor appeals to his people in terms of their motives rather than in terms of his own.

TURCO Gets a Better, More Uniform Finish And Cuts Paint Cost 35% with—

RANSBURG

NO. 2 PROCESS

Frequent color changes are simplified now in the painting of playground equipment with Ransburg Electro-Spray in this St. Louis plant. Long, tubular parts, as well as these smaller pieces, are uniformly coated with the Ransburg reciprocating disk.

QUALITY IMPROVEMENT! That was Turco Manufacturing's chief reason for changing from flo-coat to electrostatic spray painting of their quality line of playground equipment.

Not only is Ransburg No. 2 Process providing a higher quality, uniform coating on all parts, but Turco is saving 35% in paint cost!

Simplicity in color change with Electro-Spray is another important advantage here. With Turco's production methods, colors are changed 15 times in an 8-hour shift. Now, changes are made on the fly with no down-time. By contrast, the former "stop and go" method would mean over an hour's lost time in a day's operation.

NO REASON WHY YOU CAN'T DO IT TOO! Whatever your product, if it's painted, we'd like to tell you more about the worthwhile savings and benefits which can be yours with RANSBURG ELECTROSTATIC PAINTING PROCESSES. Write for our No. 2 Process brochure which cites many examples of electrostatic spray painting on a wide variety of products.

Call or write | **RANSBURG Electro-Coating Corp.**

P. O. Box 7822, Indianapolis 23, Ind.

GROWING PAINS ?

The Craddock Furniture Company has added DeBurgh Conveyors to their line four different times to match their growing business . . . taking advantage of week ends and holiday shut down periods to extend the operations of their sanding, toning, drying and shipping departments.

While tooling for their new models, Bergsma Brothers added more DeBurgh conveyors completing the installation in just five days. These companies are typical of many manufacturers that have expedited their expanded production with Koch engineering service.

Is your production outgrowing your capacity?

It's easy to expand your

CONVEYORIZED DE BURGH FINISHING SYSTEMS

write for Data File IF 108

THE FLEXIBILITY of the DeBurgh system makes it a cinch to alter your existing layout to meet future production planning. DeBurgh conveyors can be added easily to enlarge or improve the capacity of any finishing operation. Plan now to use the slack winter season to extend your production lines. Call Koch's specialists for a free layout of your plant. Let us show you how you can achieve maximum production with minimum shut-down time at least cost.

GEORGE KOCH SONS, INC.

Evansville 4, Indiana

ROCKFORD VARNISH

RV

ROCKFORD, ILLINOIS

GOOD LINES

When you have good lines, it is considered good form to show them to advantage, as our friend here is doing. We have a good line, too — a line of top quality industrial finishes that are ideal for showing off your products to best advantage. Our experienced plant/laboratory team makes sure they look right, and work right. Let us have a chance to show this line to *you*. Just give us a call . . .

MANUFACTURERS OF PROTECTIVE AND DECORATIVE FINISHES

LETTERS from READERS

Our Front Cover

Your new front cover is great! It reflects the forward and progressive thinking of the management of *Industrial Finishing*, which for 35 years has been so efficiently serving the finishing industry.—*H. W. Chester, Quality Control Manager, Broyhill Furniture Factories.*

Testing Laboratories

Would you please supply a list, with addresses, of Testing Laboratories for finishes? Those that are equipped to give a complete analysis on wet and dry samples.—*IXL.*

Information supplied.—*Editor.*

Liquid Gold

Will you kindly give us the address of the Hanovia Liquid Gold Division of Engelhard Industries, Inc., as mentioned on page 4 of "Random Comment" of Sept. issue of *Industrial Finishing?—P. Mfg. Co.*

It's 1 W. Central Ave., East Newark, N. J.—*Editor.*

Drum Agitators

We are interested in drum agitators and have been advised that you probably have a list of the manufacturers of such equipment. If you have a list of this kind, we would certainly appreciate your forwarding to us the names of these manufacturers so that we will be able to write them direct for further information on this type of equipment.—*F. Mfg. Co.*

By drum agitators, do you mean a device for shaking or rolling a drum so its contents will be well mixed? Or do you have in mind a powered propeller to insert into the drum of paint to stir same? Both of these might be called "drum agitators." In a letter we are giving you sources of supply for both types of "agitators." —*Editor.*

Striping Wheels

We are interested in locating a source of supply for striping wheels. We manufacture occasional tables.—*P. H. Inc.*

Try Beugler Mfg. Co., 4316 W. 2nd St., Los Angeles 4, Calif.—*Editor.*

Metal Filler for Cracks, Dents and Scratches

We would appreciate receiving any information you can supply us concerning filler materials for cracks, grooves, scratches, etc. on sheet metal. The filler should be suitable for use prior to painting and baking.—*L. H. Mfg. Co.*

We manufacture stainless steel equipment for the bakery, restaurant

production line

inspection

shipping

warehouse

How many places can you use push-button touch-up?

dealer showroom

installation

service calls

service shop

resale to customer

Damage to the finish of your product happens anywhere—from your own assembly department to the final customer. With the Sprayon Self-Spraying Touch Up Tool *any* employee quickly repairs the damage *right where it happens.* Costs go down. Eye-appeal of your product and customer satisfaction go up! Sprayon goes right to your source for your own touch-up finish, custom loads the Tools for you under your own label. Exclusive Sprayon features mean even unskilled help do a factory-match job in minutes ...for pennies! It's a complete paint shop in a can!

Write for FREE touch-up folder.

Free training movie, "The Finishing Touch" (16 mm, sound, color, 11 minutes) Write for information.

SPRAYON *Self Spraying* TOUCH UP TOOL ®

SPRAYON PRODUCTS, INC.

2071 East 65th Street • Cleveland 3, Ohio

and hotel industries, for example, sinks, work tables and racks.

We have read, in the August 1958 issue, of an inquiry directed to you on fillers for steel. We are interested in fillers for stainless steel to be used to make the welds on the seams of sinks, etc., appear smoother.—*A. V. S.*

In the July 1958 issue, page 78, we see a notation regarding material for patching dents in sheet metal. Will you please advise us of the sources of supply for this product? —*B. I. Corp.*

In a letter we are naming five sources of supply for materials that will probably meet your requirements.—*Editor.*

Electrostatic Detearing

Would you please inform me where an electrostatic detearing machine for dipping operations can be purchased? (This is to remove the clinging tear drops of paint that hang at the low edges of items which have been dip coated.)—*C. I. F.*

Try The Ransburg Electro-Coating Corp., P. O. Box 7822, Indianapolis 23, Indiana.—*Editor.*

Filtered Spray Booths

It has just come to our attention that you have received an inquiry from a company regarding activated carbon filters. You published a portion of this letter in your August issue on page 90. Perhaps this customer might be interested in our Hydrex spray booth, as per the literature we are sending you. Will you please give us the name of the company, so we can offer our assistance in regard to their problem?—*The Schweitzer Equipment Co.*

Information supplied.—*Editor.*

Paint for High Heat

Could you advise us where we could purchase a high-temperature paint (black) to be used on gas lighting fixtures? This will have to withstand a lot of heat.—*M. S. Co.*

Yes, in a letter we are giving you names and addresses of several suppliers of black paint that will withstand high heat.—*Editor.*

It's Liked in Sweden

We have studied Mr. P. C. Bardin's article, "Control Solvent Vapors and Put Them to Work," in the July issue of your magazine. As we are convinced that its content would be of great interest to many of our readers in the Swedish industry, we

BEAUTY–DURABILITY
PROVED

on hundreds of quality products made from metal, wood, rubber, and plastic– ranging from trucks to toys

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South Bend 21, Indiana • Baltimore • Oklahoma City • San Francisco • Los Angeles

ask your permission to reprint it in "Farg och Fernissa" (Paint & Varnish) and to borrow the photos.—*F. & F., Stockholm, Sweden.*

Permission granted.—*Editor.*

"Just a minute, Miss Francis, I've got something in my eye!"

Cold Airless Spray

We refer to September 1958 issue, on page 99; there is an article entitled "Cold Airless Spray is Now Available." Please advise as to the manufacturer of such equipment, so that we may contact the company for more information.—*H. Co.*

A short article by E. G. on page 99 of September issue discusses cold airless spraying but gives no information on who puts out equipment for this type of work.—*R. P. Corp.*

This is a product of Gray Co., Inc., 83 Graco Square, Minneapolis 13, Minn.—*Editor.*

We Have Drying Equipment

In the August issue, page 90, we notice that one of your readers expects to build a new spray room and booth in the near future and is interested in drying equipment.

We hope you have included George Koch Sons as suppliers of such equipment. In any event please send us your reader's name so that we may address him directly.—*George Koch Sons, Inc.*

Information supplied by letter.—*Editor.*

Automotive Finishes

We are interested in contacting traditional manufacturers of automotive finishes with regard to setting up a licensing agreement with a large South American client.

We would appreciate your giving us a list of names of manufacturers of automotive finishes whom we might contact. We already have the names of Rinshed-Mason, Devoe & Raynolds, DuPont and Ditzler Color. Can you supply others?—*D. I.*

Yes, in a letter we are giving you the names and addresses of a few others.—*Editor.*

Filler; Wood or Metal

Please send me the name and address of a supplier of filler that can be used on both wood and iron surfaces. It must go on smoothly, air dry, and sand easily.—*K. J. Co.*

Most fillers are designed and made for one or the other, wood or metal. In a letter we are giving you names and addresses of suppliers of wood (crack) filler; also, the same for

Finer than Silk! *

Sun Ray's 0000 is the finest grade steel wool that can be made. Careful, precise manufacturing methods and utmost vigilance in grading produce the long, uniform, resilient strands. This fine, cashmere-like steel wool assures consistent, perfect smoothness for rubbing all fine finishes to a lustrous richness. Try it! Write today (on company letterhead) for a generous sample!

Sun Ray makes steel wool in a variety of forms and grades for every job . . . Layer Built Pads . . . Rolls . . . Reels . . . Bulk Pound Tubes.

* Silk thread from a cocoon is approximately 520 millionths of an inch dia. *A strand of finest Sun Ray Steel Wool is 313 millionths of an inch dia.*

THE WILLIAMS COMPANY • LONDON, OHIO

Sun Ray STEEL WOOL

manufacturers of quality steel wool for over 35 years

suppliers of metal filler. And we have one that is claimed to be satisfactory for use on both materials.—*Editor.*

Knife Coating Machines

In August issue of *Industrial Finishing*, pages 88-90, there is an article that makes reference to a machine for knifing (knife-coating) by the Automation Associates, Inc., Kurt Rosenbaum. There is no reference as to the address of this company. Would you please forward a request to them for information concerning this machine?—*A. Tileboard Co.*

In a letter we are giving you names and addresses of two concerns, from whom you can obtain knife coating machines.—*Editor.*

Gauge for Measuring Wet Film Thickness

On page 54 of August issue, you have an illustration of a wet film gauge. We would like to know where this equipment can be purchased.—*T. S.*

You can get one of these from Gardner Laboratory, Inc., P. O. Box 5728-1, Bethesda 14, Maryland.—*Ed.*

Filler Padding Machine

I notice on page 93, August 1958 issue, an inquiry for padding and removing filler. We are also looking for such a machine. Would you please forward names and addresses of firms manufacturing same?—*A. Co.*

Either one of two different types of machines might be used for this work. In a letter we are giving you names and addresses of manufacturers of these machines.—*Editor.*

"Remember, Son, Grandfather handed the business down to me and now I'm turning it over to you. Promise me you'll keep up the payments on the place."

Finishing Guitars

We have noted with interest all of the articles on Production Finishing, etc., in this magazine . . . . . one in particular, "How We Finish Occasional Tables," published in March issue, 1957, page 61. This being a complete coverage on small articles similar to our own, has prompted us to ask you for any information on production and finishing of good quality guitars.—*Maton Pty. Ltd., Victoria, Australia.*

We are sending you tear sheets of an article on this subject, published in August 1947 issue of I. F.—*Editor.*

SO TOUGH

YET SO Smooth

"Ice Follies" Photo
Courtesy Shipstad and Johnson

National Sanders

WITH ORIGINAL ORBITAL ACTION

National Sanders are built for *tough* operation on production lines. As they are vibrationless and easy to operate, they produce the *smooth* surface so essential to a fine finish. These lightweight, powerful sanders can be used on wood, metal, plastic, felt, stone, and other surfaces. National makes a complete line of electric or air driven sanders with either straight-line or orbital action. The popular model 400 is shown below. Write for *NEW* folder today!

NATIONAL-DETROIT, INC.
Rockford, Illinois

Finishes take a beating, too . . . when children are around. But junior's artwork wipes off clean, when the finish is skillfully formulated with the right vehicle and TITANOX* titanium dioxide white pigments. TITANOX-RA, TITANOX-RA-50 and TITANOX-RA-NC are first choice for finishes. Here's why: they'll help you maintain the color, gloss, opacity and durability the finish must have for indoors or outdoors. And with all this, TITANOX pigments are outstanding in their working properties —adaptable to any type of mixing and grindinc program. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; offices and warehouses in principal cities.

5732

TITANIUM PIGMENT CORPORATION

Subsidiary of

NATIONAL LEAD COMPANY

*TITANOX is a registered trademark for the full line of titanium pigments offered by Titanium Pigment Corporation.

Colortoning Plywood

We are interested in coloring (colortoning) birch and elm plywood. We have done some experimenting with water-soluble dyes mixed with resin sizing; however the results are not satisfactory. Most of the coloring stays on the surface and comes off when the panel is sanded.

One of our customers has asked us for the colortoning plywood and we are eager to please them if possible. The plywood must be colored and smooth, ready for finishing, which they will do themselves. They are interested in pastel colors, including gold, copper and turquoise shades.

We will appreciate any information or suggestions which you may be able to give us.—*S. W. C.*

Much depends upon just how far you wish to go in this work. If you wish only to stain the face of the panels, then an NGR (non-grain-raising) stain in suitable color should accomplish your purpose. This stain would have to be sprayed on the wood.

If you wish to stain and seal the surface, it might be possible to mix the stain and sealer. If it is possible to obtain a mixture having sufficient body, then it might be possible to roller coat the material. It might even be possible, if your production is of sufficient volume, to use one of the new pouring or flow coating machines.—*P. C. B.*

The grain structures of these two woods are quite similar, even though the patterns are distinctive. Being close grained, or hardwoods, they normally require no filling. The problem appears to be first, to stain the wood the desired color and then to seal down this color. Spirit stain suggests itself because of the quicker dry and superior penetration over water or oil-soluble stain.

Select a quick drying stain, spray it on, and follow up with a nitrocellulose sealer. The sealer, properly formulated, will have excellent adhesion and can be coated subsequently on the job, or the panels can be completely finished at the mill in any desired luster.

You mention several opaque finishes. Again I would use a nitrocellulose type sealer pigmented with chemical lake colors, followed by a clear slightly pigmented with the same colors.

In the stains, you could use either the lake colors referred to, or toners. Toners might be better because they have greater tinting strength and superior transparency. In the opaque finishes, chemical lake color dispersions probably would be better.

Note: A lake is an organic soluble color combined with an inorganic base or carrier, whereas a toner is a pure metallic salt of an organic color. Generally speaking, toners have more strength and better transparency than lakes. The lakes tend to "milk" or "haze" the film.

If this is to be a production matter, an automatic spray could be utilized—where the panels pass horizontally over a table and the spray heads pass back and forth horizontally at right angles to the path of

The man from "Minnesota" was here

. . . helped develop new *3 in 1* version of "Onan silver green" finish

5,000 parts an hour pass through this Onan parts finishing section. The same paint that takes a fast force-dry on these parts also dries beautifully at room temperature on housings and complete units.

The showroom of D. W. Onan & Sons Inc., features a display of this distinctive silver-green equipment. Onan protects vital product identity with a superior finish from Minnesota Paints, Inc., and one formulation does it all!

ONE MINNESOTA PAINT FORMULATION REPLACES THREE OTHERS

"As much a part of product recognition as our trademark." That's what the sales department says at D. W. Onan & Sons Inc., internationally known manufacturers of electric plants, engines, generators and Kab Koolers.

They're talking about "Onan silver green", a striking metallic color that identifies Onan equipment.

To satisfy a variety of production requirements, at least three separate paint formulations formerly were necessary. Conditions in usage such as chemicals, corrosion, fumes, cold weather, etc., had to be resisted. Application by conventional spray or airless spray had to be accommodated. Room temperature drying for screen processing had to be used, as well as force-drying of 5,000 parts an hour.

It was complicated. Then Ralph Markwood, superintendent of the Onan paint department, gave his problem to Minnesota Paints.

After detailed research, the specialist from Minnesota Paints brought back *one formulation* that met *all these requirements!*

If this kind of detailed study of finish problems appeals to you, write Minnesota Paints, Inc., for a personalized paint survey.

Minnesota PAINTS

MINNESOTA PAINTS, INC.
1101 THIRD STREET SOUTH
MINNEAPOLIS 15, MINN. FE 2-7371
PLANTS: Minneapolis • Fort Wayne • Atlanta • Dallas

travel of the panels. The stain, sealer, color coat and finish coats could all be applied with the same equipment. Leading spray gun manufacturers can furnish this equipment, and any regular supplier of organic finishes can sell you the finishing materials.—*C. R. Brown.*

Polyvinyl Alcohol

I have come into possession of some materials, including "Polyvinyl Alcohol" (powder form), that I know absolutely nothing about, as to what its uses are. Will you please tell me what solvents or other products can be mixed with this material and what it is used for? Also, a general idea of price per pound that it is sold for. —*E. R.*

This name, "Polyvinyl Alcohol," is a generic term and may refer to any one of several different items. These materials are produced by DuPont, Bakelite, Colton Chemical Co., and perhaps several others. The materials listed under this general name vary in solubility in water, and generally heat is necessary to get them into solution. They are odorless and tasteless and quite oil resistant.

They have many uses—adhesives, emulsifying agents, binders in ceramics, etc.; they are used in the manufacture of synthetic fabrics, in the manufacture of oil and solvent resistant clothing, nylon stocking manufacture, coating and sizing of paper, photo-sensitive coatings, and other applications.

Our suggestion would be to determine, if possible, just which one of the polyvinyl alcohols you are interested in, and find out the name of the manufacturer. Then communicate with him for further details as to properties, uses, prices and the like.—*C. R.B.*

Why Sunlight Yellows Finish on Furniture

Our factory is engaged in manufacturing wood furniture which is being exposed to hard tropical sunlight. Definite yellowing has occurred on some of the case fronts, which are finished in white lacquer enamel with water-white dead flat lacquer. Our finishing department and our supplier have carefully re-checked all formulas for accuracy, etc.

We would appreciate any suggestions as to how this yellowing can be eliminated in the present instances and prevented in the future, as our problem is a most urgent one. —*F. G. C.*

You do not state just what type of white lacquer enamel you are using, so we assume that a normal furniture lacquer is involved. If this be the case, after-yellowing would most surely result. The first thought would be to "blue up" the film; this would tend to obscure the yellow but would not eliminate it.

You probably have the combined effect of the white film discoloring, and the water white dead flat yellowing. While it is true that additives can be used which claim to minimize the yellowing, they merely delay the action. Ultimately the objectionable color develops. This is a matter that has plagued the industry for many years. As long as we were restricted to nitrocellulose lacquers, about the best solution was to go to automotive type materials. Ordinary furniture lacquers are made of hard resins, which have a tendency to discolor with age and under sunlight, whereas the automotive type finish is composed of modified alkyds and chemical plasticizers; and the latter have better color retention and less tendency to discolor.

You might try this solution: How-

'SANCO PAINT'

will step up your sales!

NOW...THE ONLY PAINT

Sanitized®

Sanitized to resist Germs, Bacteria, Fungi, Mildew, Mold and Odors.

Now, when your product is finished with SANCO Sanitized* PAINT it provides you with an unbeatable selling point... "IT'S SANITIZED"!

And only SANCO PAINT can give you this remarkable advance in a quality finish.

The Sanitized* label on your product is a tremendous sales advantage, boosted by worldwide consumer acceptance and intense interest everywhere. And remember, more than 600 successful licensees such as B. F. Goodrich, General Tire, Cannon Mills, Ideal Toy Corp., are featuring Sanitized*

Contact the Monroe Sander Corporation, the world's first licensee for Sanitized* industrial paint finishes. Get full information now.

THE MONROE SANDER CORPORATION
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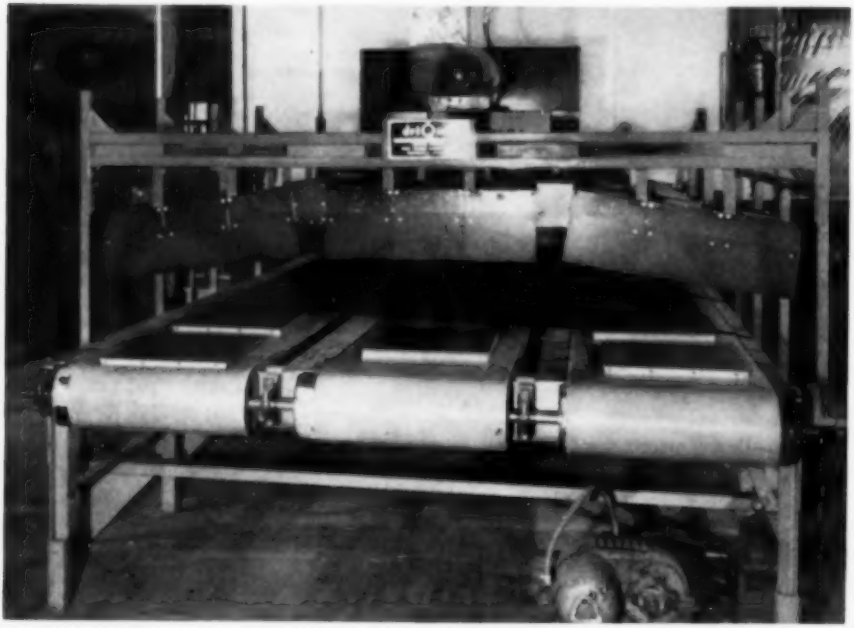
ever, there is a rather recent development which probably would be much more satisfactory; that is, use butyrate. Your first coat could well be a regular lacquer undercoat. The color coat would be a butyrate white lacquer of the desired luster. This material can be rubbed out if the job will carry this cost; or a clear butyrate top coat of the indicated sheen could be applied.

Just a word about pigmentation: A non-yellowing and non-chalking rutile (titanium oxide) should be used. Titanium has the virtue of being very white and suffers practically no color change. Be sure that it is one of the non-chalking pigments. The use of a clear finish coat may be unnecessary. A comparative test between your present schedule and the proposed system should readily determine the comparative virtues of the two materials.

It is my opinion that the use of butyrate with titanium oxide will eliminate your troubles. Your regular supplier should be able to supply a suitable material. Be sure to advise him just where and how you propose to use the material, so he can adjust his formula to go over your particular surfaces. Incidentally, any additional cost on materials will probably be offset by the elimination of the clear top coat.—*C. R. Brown.*



One of two driQuick ceramic generator electric infrared ovens in the Kroehler Mfg. Co.'s Bradley, Ill. case goods plant. By the use of heat controls, each oven is divided into zones, making it possible to have a different degree of heat in each zone of the oven. The ovens are being used to dry base coats on flat parts which will be assembled later.

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● Play your cards right—Insure greater paint durability. Treat your metal before painting the safe, proven way—

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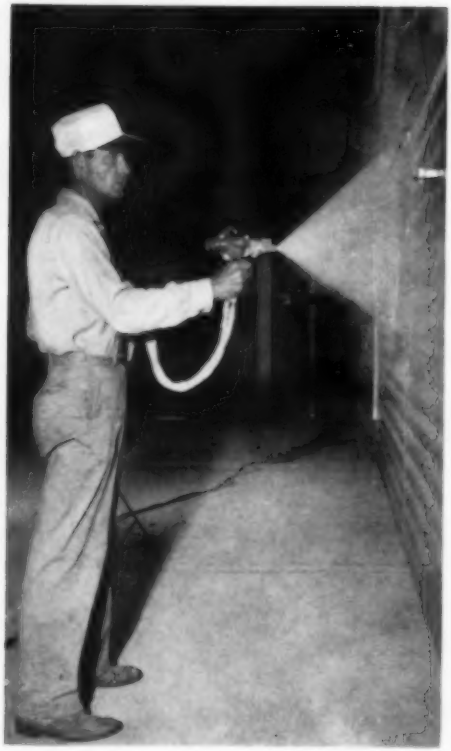
BEDE AIRLESS SPRAY



WHAT IS AIRLESS SPRAY?

A new concept in paint spraying . . . atomization by straight hydraulic pressure only, virtually eliminating the usual rebound of paint particles.

HOW IS IT ACCOMPLISHED?

By harnessing Heat and Pressure, the two basic forces of nature. First the paint is put under pressure 400 to 600 P.S.I., then heated to 160° to 200° F (70° to 95° C), then atomized through a special hydraulic nozzle.*

WHAT ARE THE BENEFITS?

You can eliminate at one stroke much of the waste, inefficiency and health hazards, commonly accepted as unavoidable, with air spray. Less overspray, heavier film thickness, quicker drying and better adhesion are some of the principal benefits. In some cases, the need for a spray booth is eliminated. The total cost of the painting operation can be lowered by 25% to 50% or more.

Covered by patents in the principal countries of the world by James A. Bede

"Paint the Product . . . Not the Booth . . . with AIRLESS"

BEDE INTERNATIONAL DEVELOPMENT CO.

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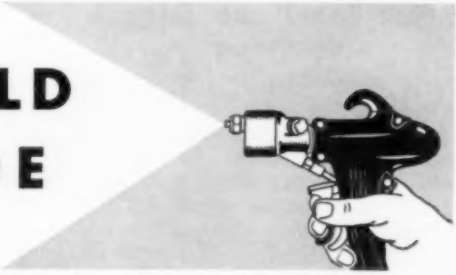
WORLD NOW USED WIDE



WHO HAS ADOPTED THE BEDE AIRLESS SPRAY?

Virtually every type of paint is now being successfully sprayed with AIRLESS. The following are some of the principal industries that are increasing their use of AIRLESS: automobile, machinery, farm equipment, aircraft, ship building, railroad, furniture, structural steel, appliances, maintenance, etc.

Every manufacturer who paints his products should investigate the savings and other benefits that AIRLESS can bring him.

Write For Complete Information

BEDE AIRLESS SPRAY EQUIPMENT (as well as the Bede Paint Heaters) are manufactured, under exclusive license arrangement, by the following chain of world-wide licensees:

United States — **Amherst, Ohio**
Nordson Corporation
(Formerly Bede Products Corp.)
Mr. Eric Nord, President

Canada — **Toronto**
Bede Products (Canada) Ltd.
Mr. Walter Wilson, President

England — **London**
T. C. Spray Finishing Systems (Bede) Ltd.
Mr. Tom Cowlard, Director

France — **Paris**
S. A. Kremlin
Mr. Michel Binoche, Director

Italy — **Milan**
Basfer diBassi Fernando
Mr. Fernando Bassi, Director

Germany — **Hamburg**
Deicke & Kopperschmidt
Mr. W. Kopperschmidt, Director

Denmark — **Copenhagen**
Bede Products Scandinavia
Mr. Kai Klammer

Japan — **Nishinomiya**
Japan Bede Industry Co., Ltd.
Mr. S. Ohya

Sales agencies in Australia, South Africa, Switzerland, Phillipines, Mexico and other countries.

Flat Panel and Edge Graining

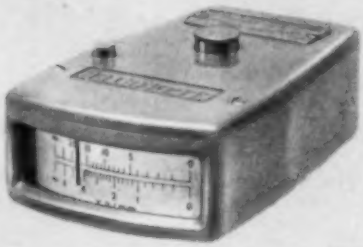
THE REPRODUCTION of fine wood grain designs on common wood and composition material, like hardboard, has advanced to the point where it no longer presents a problem. Through the use of two horizontal grain transfer machines, it is possible to print the grain design in two colored inks, with the ground color coat forming the third color. This process reproduces and even enhances the beauty of the most exotic woods.

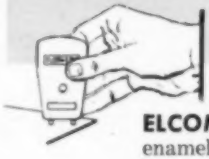
To make this type of operation almost automatic, the sheet stock is run through a roller coater for the ground color coat, which is then dried in a conveyorized oven. Then it is run through the first grain transfer machine, and on through the second machine which is lined up in tandem. Correct registration is accomplished by using guide strips between the two machines. After the printed sheet passes through a short infrared electric oven to dry the printed design, it passes through another roller coater which applies a clear protective top coat.

This may well be called production grain transferring. But there are grain transfer jobs that cannot be included in this category. For instance narrow strips, say ¾-in. to 1⅛-in. wide, used for dividers or edge strips. Unless these narrow strips can be made up and grained in multiple and then cut to width, they must be grained separately.

Measures Nonmagnetic Coatings with ± 5% ± .0001" accuracy

NEW pocket-size THICKNESS GAUGE





ELCOMETER measures thickness of porcelain enamel, paints, platings, foils, glass, paper, plastics, and otner nonmagnetic coatings quickly and accurately. Gauges flat or curved surfaces and hard-to-get-at spots easily. Needle locking device assures correct reading every time. Complete with tough leather case containing inner pocket for test strips. Weighs only 6 oz. Completely self-contained.

FREE TRIAL. Ask your purchasing agent to order an Elcometer on trial basis. Retail price, F.O.B. Cleveland **ONLY $75.00**

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After assembly it may not be possible to transfer the wood grain by machine. Much of this type of odd size or assembled work can be grained with a hand roller.

The principle remains the same. A rubber or gelatin composition applicator roller, 4 to 6-in. wide, may be used to pick up the grain design from an inked copper plate; then the grain design can be transferred to the narrow ground coated surface. Because of the narrow exposed surface to be printed, it is advisable to pick up the grain design fairly close to the edge of the graining plate where the long, more or less parallel grain lines occur, rather than in the center where the so-called flat grain appears. Otherwise, little if any grain design will show. These small hand rollers must be cleaned of all grain design with solvent after each single revolution.—*B. P. C.*

Metalwash Appoints Cleveland Representative

C. Berton Persons has been appointed representative for the Industrial Division of Metalwash Machinery Corp., Elizabeth, N. J., manufacturer of finishing systems for the metal products manufacturing industry. In his newly created post, Mr. Persons will represent the company in the rapidly growing greater Cleveland market area.

Mr. Persons has a broad background of executive sales and engineering experience with leading firms in the metal products industry.

F. A. Chichester Died Sept. 27

Frank A. Chichester, 83, well-known salesman in the Jamestown and Rochester, New York area, died Saturday, September 27, 1958. He had been employed by the Schaefer Varnish Co. for 25 years and prior to that he was employed by the Louisville Varnish Co. for 25 years.

You Can't Use the Same Paint on Everything

THROUGHOUT all industry, wherein any painting of products is involved, one finds that materials are being sought which are universal in character; that is, materials that can be used for several different kinds of surfaces. Of course, this is a practical approach, particularly in the case of a job finisher who otherwise would have to maintain a large inventory of many varieties of paints.

In addition, the possibilities of contamination and deterioration are always present. Thus, some added hidden costs must be considered if a specialized coating is to be utilized for each different kind of product that goes through the production line. While a degree of standardization of paint materials may be a mark of good job finishing management, it is seldom possible, especially now when so many different materials are used in making various products.

Really, there are many drawbacks to the use of one finish for all surfaces. In many of the manufactured products today, new basic metals are being used. Where formerly only such metals as steel or aluminum were encountered, one may now find beryllium, titanium, magnesium, etc., together with many plastic items, It appears that even more zinc and cadmium plated parts are receiving some organic coating on all or part of the plated area. So it is increasingly more difficult (in fact, it is just

You Can Pay *MORE*
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The Adelphi-Baer* laboratory staff of expert paint chemists —technicians skilled in every phase of modern paint technology—formulate to your special requirements. Daily they attack and solve new finishing problems, using the finest raw materials, cutting your costs at the same time.

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Investigate Adelphi's new laboratory- and product-tested **Plastisols and Organosols**

Ask about Adelphi's **Baking Enamels**—extremely durable, stone-hard flexible films designed to meet your most exacting requirements.

Get details on Adelphi's "Satisfaction Guaranteed" plan. Get Adelphi's price on a "twin" to the paint product you now use.

For immediate attention contact Mr. H. Hirschkorn, Special Assistant to the President.

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*Adelphi and its Baer Bros. Division have been specialists in Industrial Finishes for over half a century.

Functional Finishes!
If you require your coatings to accomplish some specific task — something beyond mere ornamental appearance or average longevity . . .
We make ACRYLIC, ALKYD, CELLULOSIC and VINYLOID coatings for a very wide range of specialized industrial applications.
TRY US!
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about impossible) to obtain universal paints that will produce satisfactory results on every imaginable substrate. The attempt to standardize too far has led to some product finishing problems.

One plant manufacturing certain electronic parts for Government use suddenly found that numerous rejects were reported because of paint failures. Naturally, the first course adopted by the manufacturer was to blame the failure on "a bad batch of enamel." The usual hurried call went out to the paint vendor. However, it soon became apparent that a new beryllium alloy was being coated, and the one enamel that had excellent adhesion to all previous metals used, could not be made to adhere to the new alloy. A newly formulated specialized coating soon corrected the difficulty.

Metallurgical research is on a continuous progressive march toward better and more improved metals to meet the challenge of our present day scientific age. As a result, it is more difficult to obtain paint or finish formulations to meet all contingencies. While some reasonable standardization of lacquer and enamel products are evidently desirable, finishers should be alert to the fact that specialized finishes are necessary in many instances.

A coating that is satisfactory on nine different substrates (surfaces) should not be condemned if it fails on the tenth. The finisher who is not aware of, or refuses to accept, the proposition that the ultimate paint has not been developed—he will be submerged with difficulties and problems sooner or later. To recognize these limitations will nip many problems in the bud and produce a more smoothly operated painting or finishing department.—*J. C. T.*

Pre-Painted Steel in Coils

A NEW PROCESS for the application of vinyl and enamel coatings on pre-painted steel has been perfected by the Brainard Steel Division of Sharon Steel Corp., and is in commercial production.

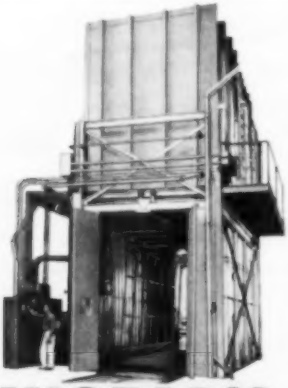
The process is the result of two years experimentation and field testing by Brainard's research and development group working in cooperation with five major paint suppliers. It is now being used on black plate, cold rolled strip, sheet coil, electrogalvanize and Sharon Galvanite.

The ability of these new coatings to withstand severe forming applications without fracture of the paint surface has widened the market for pre-paint steel coil across a wide segment of American industry.

All the colors of the spectrum plus black, white and various gold and bronze shades are available, with finishes in high gloss, semi-gloss and dull. Color can be applied to one or two sides and painted edges can be furnished. These various applications of colors and paint can be applied in one continuous operation.

Salt spray tests in excess of 1000 hours, without break through, have been run on Brite Galvanite painted strip; and similar tests with cold rolled carbon strip, textured Sharonart, bright zinc and electro - galvanized steel have been equally successful.

Fracture tests have indicated that the fracture point of the finished paint surface is higher



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Despatch built this huge but delicate furnace for Douglas Aircraft to radiate new strength into the new DC-8 Jetliner. A powerful elevator carries wing and fuselage sections up into the heat chamber where the temperature sprints to 930°. Then the parts descend 28 feet into the quenching tank. One man on a control board runs the whole operation!

For full facts on the capabilities of all Despatch heat treating and finishing products and systems, write or call . . .

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DESPATCH OVEN CO.

DESPATCH

than the steel itself. The steel is cleaned and phosphatized, chromated and rinsed to prepare the surface for painting to insure paint adherence and obviate undercoat corrosion possibility.

The painted strip can be deep drawn, stamped, bent, blanked, roll formed and die formed without paint or metal fracture. Metal is run in coils . . . . on widths up to 12-in. and in gauges of .008 to .065 inclusive.

Brainard's painted strip process is a continuous operation in coil form stock from payoff reel through chemical treating tanks, coating unit or coating and printing unit, baking oven to take up reels ready for slitting or packaging. Close quality control at each stage of the operation checks dry film thickness and color matching.

Charles Holland Died Sept. 16

Charles Holland, president of J. Holland & Sons, Inc. (spray painting equipment), died Sept. 16th at his home, 222 W. Olive St., Long Beach, New York.

Charles joined his father, Joseph Holland, in 1916 and with his brothers, William and Louis, founded the company. He was active for 40 years in metal finishing and affiliated industries.

Surviving are his widow, Henrietta, two sons, two daughters, two brothers and four sisters.

Chromate Sealing, Brightening Finishes for Metals

Conversion Chemical Corp. has made available a new fact sheet as an aid to quick selection of suitable chromate sealing and brightening finishes for nonferrous metals.

Printed on the front and back of a single sheet are the specifications for use of a "Kenvert" coating for each metal and each type of finish desired. It is a handy reference and aid. For a free copy of Fact Sheet No. F-2, write to Conversion Chemical Corp., 98 E. Main St., Rockville, Conn.

For more data, circle 19 on colored card.

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TEST PEARL GLO (new synthetic *Patented essence), whether you spray, dip or incorporate, you'll find a saving in equipment & labor required. Use it on any sealed surface, plastic, metal, wood, leather, paper. It may also be incorporated into Acrylics, Polyester, Vinyl, Polyethylene, etc. Gives a dazzling pearl finish at very low cost.

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Representative Inquiries Invited

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Concealed Parts Must Have Protective Paint

CONCEALED parts are equally as important as exposed parts of your product. If they were not necessary they wouldn't be included. And the paint job on concealed parts is just as important as that on the exposed parts. For concealed parts, the chief function of the coating is protective—and this is always important. Of course, in the matter of beauty and smoothness, the coating on concealed parts need not be as good as the paint job on exposed parts, but complete coverage, good adhesion and economical application are definite requirements.

If the construction and surface contour of concealed parts are such as to permit dip coating, this may be an economical method of paint application. If air pockets are likely to prevent complete coverage, then perhaps these parts could be painted by flow coating or by a centrifugal machine.

Just because concealed parts are out of sight in the completed product—that is no reason why correct surface preparation would not be important. The surface of concealed parts made of metal should be cleaned and phosphatized exactly the same as the exposed parts. This is usually accomplished by running them through a combined metal washer and phosphatizing machine, or through a system of tanks. These concealed parts are necessary and important to your

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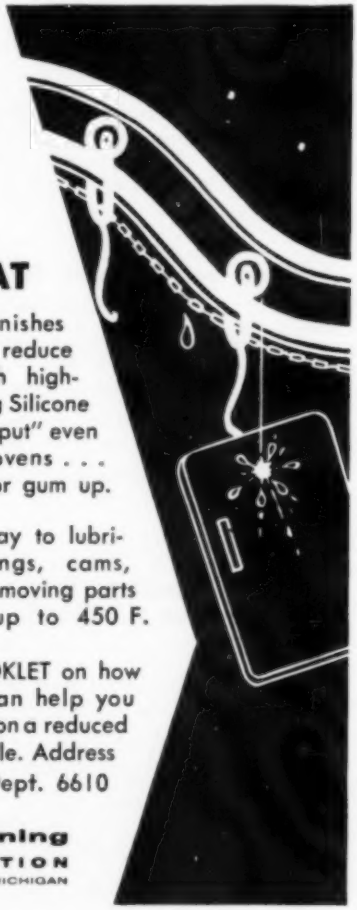
Protect your product finishes against dripping oil . . . reduce rejects, end waste with high-temperature Dow Corning Silicone Greases. Silicones "stay put" even in the hottest baking ovens . . . won't thin out, oxidize or gum up.

It's the money-saving way to lubricate bearings, bushings, cams, gears, valves and other moving parts at any temperature up to 450 F.

Send for FREE BOOKLET on how silicone greases can help you improve lubrication on a reduced maintenance schedule. Address Dept. 6610



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There's a big difference in TACK-CLOTHS—that's why BOND processes four different meshes of cloth with several types of formulations to give you the cloth that best "fits" your special needs. You can get BOND TACK CLOTH packed just the way that suits you best, too—in 150 yard Rolls of 36" wide cloth or in handy Cartons.

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ALL BOND TACK CLOTH is Spontaneous Combustion Proof, Lint-Free and Wax-Free. Gives a sparkling speck-free finish every time. Clean and Sanitary. No waste. Choice of Standard, extra Tacky or less Tacky.

TRY THEM AND COMPARE RESULTS. Samples gladly sent upon request.

A WARRANTY OF SATISFACTION IN EVERY CARTON

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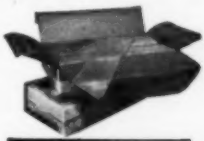
Cut off any size piece as needed.



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Size is 18" x 36"—folded to 4-½ x 18" or 9" x 18" for ease of handling. Cut and folded—ready to use.

Also Individually Packed in Glassine Envelopes — 144 to the carton.

Bond. CHEMICAL PRODUCTS CO. *"The Tacky Wiper Specialist"*
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product; otherwise they would not be there. They deserve a good protective coating, properly prepared and applied.—*M. C. F.*

Ultrasonic Demonstration At Metal Show, Cleveland

Branson Ultrasonic Corp., Stamford, Conn., will use a transparent tank to show visitors at the National Metal show (Cleveland, Oct. 27-31) exactly how ultrasonic energy cleans. Parts soiled with grease or even insoluble contaminants will be immersed in the plastic tank. As soon as power is turned on, soils will visibly explode off plastic and metal pieces without harming them. Within seconds, the parts may be removed from the tank sparkling and dirt-free.

Energy for the cleaning action will be supplied by a 500-watt Sonogen Model AP-100 ultrasonic generator; its high-frequency electrical pulses are changed into mechanical vibrations by a transducer mounted in the tank. These 38-kc. vibrations cause cavitation — the rapid formation and sudden collapse of thousands of voids throughout the liquid, each acting as a tiny scrub brush.

Epoxies; Skin Trouble?

A little 12-page booklet cites hazards of epoxy dermatitis and lists 36 specific and practical rules for prevention. Recommendations are grouped under five headings: Education of workers and supervisors; company housekeeping procedures; ventilation; personal cleanliness of workers; and use of protective creams and clothing.

Recommendations are based on practical experience of leading epoxy fabricators, materials suppliers, public health agencies and insurers.

The booklet is available free in quantities for distribution to supervisors or to workers on epoxy operations as part of company safety education program.—Milburn Co., 3246 E. Woodbridge, Detroit 7, Michigan.

For more data, circle 20 on colored card.

Salesmen, Are You All Alert and Listening?

IF SOMEONE were to walk up to a salesman of industrial finishes and offer him $1000 with no strings attached, he would certainly accept the money. Yet why do so many coatings salesmen resist the opportunity to make more money?

Many of the larger companies, and a number of the smaller ones also, make it a practice to conduct technical sales meetings where formulating chemists and sales personnel are brought together to discuss new ideas and methods. At these gatherings new products are usually introduced.

Unfortunately, many salesmen take the view that these meetings are useless. They attend the meetings and hear the talks, but do not listen. Why do so many salesmen resist knowledge and refuse to learn? To a salesman, knowledge is money . . . . translated by ability to offer improved customer assistance, and resulting in rising sales and commissions.

In some of the larger finish manufacturers' setup, salesmen have little if any direct contact with the technical staff. However, at a technical sales meeting an opportunity is provided whereby salesmen can learn of new developments in the laboratory. This is not a one way street. It also affords an opportunity for the salesman to better acquaint the chemist on field problems of which, in the normal course of events, the laboratory men may

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Order a 5-gal. can at drum price and Convince yourself.

Satin Finish Wooling Lacquers

These are ideal lacquers for use where a satin sheen finish with a smooth, silky feel is desired, without requiring a costly rubbing operation.

Their intrinsic and economical values are fully appreciated when used in place of the regular semi-flat lacquers, to produce the much desired satin, velvety finish.

Mac's Satin Finish Wooling Lacquers, if steel wooled only, or if steel wooled with wax using 3/0 or 4/0 steel wool, will produce a very smooth, silky, and scratchless finish that feels more silky than the regular satin finish lacquers. The steel wooling process is inexpensive and easily done.

Mac's Satin Finish Wooling Lacquers are made in different sheens which may be a flat comparable to a 20 sheen or as bright as a 75 sheen lacquer. They may also be used without steel wooling and will produce a fuller and more homogenous finish than the regular semi-flat lacquers.

Mac's Satin Finish Wooling Lacquers are available in water white light resistant, for use on white or pastel finishes, or in the regular lacquers for the darker shades such as mahogany, walnut, etc. The water white satin finish wooling lacquers are universal lacquers and may be used on both white and medium to dark finishes wherever space for storage is important.

When ordering, advise sheen desired and whether you want water white or regular satin sheen wooling lacquer.

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Headquarters for Fine Finishes Since 1875

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be completely unaware. The interchange of information will aid the chemist to aid the salesman to better service his customers.

Some time ago a medium size manufacturer of industrial finishes held one of these technical sales meetings wherein new products were outlined together with methods of application. In fact, salesmen were given an opportunity to actually spray the new products.

Soon thereafter sample orders were received and shipped out, but for some unexplained reason no reorders of any quantity were entered. The salesmen were questioned but the only answer they could give was that the new products just didn't work out well enough.

Finally, just before the company was about to abandon the new materials, a chemist was sent around to the various companies to obtain a first hand account of the disinterest. To say that his results were amazing would be an understatement. In one customer's plant, lacquer thinner was used instead of the reducer supplied. In another, the guns on an automatic spray setup were adjusted with inverted air pressures between the fluid and atomizing. In still another, a quick dry spray formulation was tried on a roller application. These were just a few of the things uncovered. When the proper procedures were installed, all of the customers were delighted.

Of course, the salesmen involved were mediocre or complacent. It is to be hoped that this type is the exception, but unfortunately there are too many in this category. Sometimes we wonder what would happen if these salesmen were offered $1000 in green bills.—*Z. J. A.*

Murray Heads Development of Product Finishes for Davis

Thomas M. Murray recently joined the H. B. Davis Co., maker of Davis of Baltimore Paints, as head of Development of Product Finishes.

Mr. Murray brings with him many years of experience with other manufacturers of finishing materials. His time and efforts will be devoted to the formulation of product finishes, with emphasis on metal decorating, and in giving technical assistance to the company's industrial salesmen.

"Vibraslide", Improved "Live Action" in Barrel Finishing

Metal Finish, Inc., of Frelinghuysen Ave., Newark, N. J., manufacturer of barrel finishing equipment and accesories, has prepared for distribution Bulletin 255, which describes the Vibraslide Barrel Finishing Machine.

The principle which makes Vibraslide a new factor in the field of Barrel Finishing is the fact that while the finishing barrel is rotating (at a far slower and less damaging speed than formerly was possible) a vibrational force is incorporated into the barrel itself which allows the finishing work to be done in a fraction of the time previously necessary, with no damage to the parts being finished.

For more data, circle 21 on colored card.

Metal & Thermit Personnel

R. T. Gore, formerly a member of Metal & Thermit's market development staff, has been appointed sales engineer and will specialize in introducing new products to electroplating plants and shops in the northeastern states.

W. W. Brodin, sales engineer, previously connected with Metal & Thermit's Rahway, N. J., office, has been transferred to the company's East Central Regional office and will serve plating and coating accounts in the Detroit-Toledo area.

Chas. Fazekas, formerly an organic coating service engineer for Metal & Thermit, has been appointed sales engineer in the northeastern region.

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51 YEARS
SPECIALISTS IN WOOD FINISHING MATERIALS

7,400 Sq. Ft., New Research and Formulation Laboratory in Galax, Va.

FINE WOOD FINISHES

LINDEMAN has the experience and the facilities, plus a fifty-one-year reputation, to manufacture superior finishing materials for wood and allied wood products. Permit our salesmen and technicians to help solve your finishing problems.

Courteous Cooperation *Quality Materials*
Dependable Service *Economical Prices*

LINDEMAN

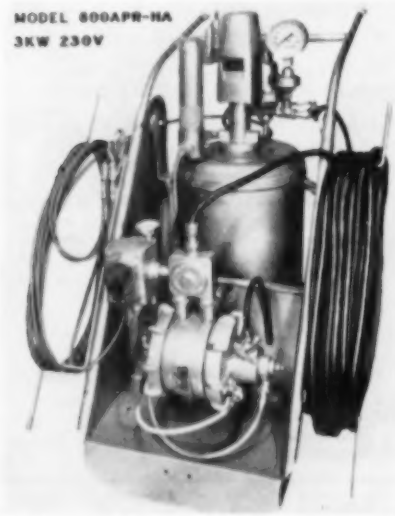
Wood Finish Company, Inc.

Indianapolis 6, Ind. Galax, Va.

Airless Paint Spray System Is Compact and Portable

The Spee-Flo Co., 6614 Harrisburg Blvd., Houston 11, Texas, introduces the Chieftain HydraAirless, a new and portable airless paint spray system based on hydraulic atomization. This unit offers almost total elimination of overspray, resulting in substantial savings of paint and permitting spray painting to be done in open areas.

The HydraAirless system, based on mechanical atomization, requires that viscosity-controlled paints be forced through a specially designed orifice at high pressure. Desired atomization is achieved through control of viscosity, orifice and pressure. No atomizing air is used.



Chieftain Hydra-Airless spray painting unit; safety, compactness, convenience.

The Chieftain HydraAirless combines the explosion-proof Spee-Flo heater and divorced action pump in a mobile unit which carries the original five or ten gallon container. Circulation is maintained for temperature control and the operator can select paint temperature by turning the Dial-a-Matic controller.

The unit is capable of operating one gun on a hose line up to 75-ft. in length or two guns simultaneously on hose lines up to 50-ft.

Literature illustrating and explaining the system is available from the Spee-Flo Company.

For more data, circle 1 on colored card.

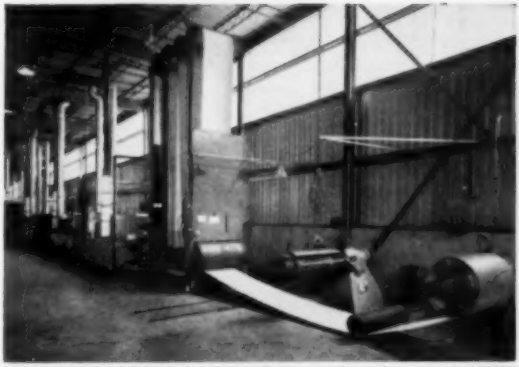
Acid Cleaner for Metals

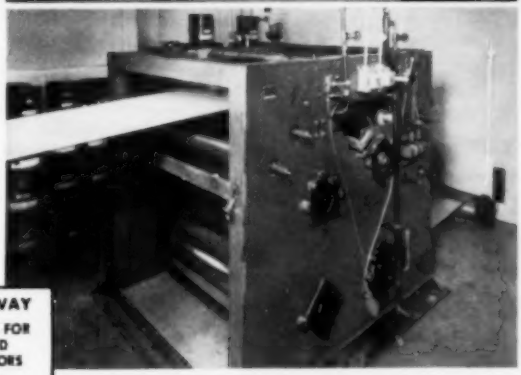
A non-flammable phosphoric acid type cleaner and deruster for most metals has been developed by Enthone, Inc., a subsidiary of American Smelting & Refining Co., 442 Elm St., New Haven, Conn. Named Enthol 59, the new product is a blend of phosphoric acid with emulsifiers, solvents and penetrants which rapidly removes rust, metal oxides, oil and grease from metals in one simple operation. Additionally, it leaves a light phosphate film on steel and zinc which is an excellent base for painting or other organic finishing.

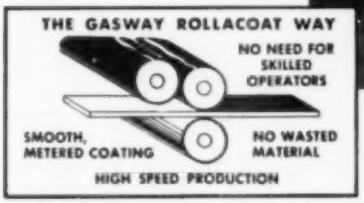
Enthol 59 can be used hot or cold and can be applied by dipping, brushing, swabbing or spraying. The working solution is made by diluting one

Prefinishing of Metal Strip by GASWAY

ORIGINATORS AND LEADERS IN THE FIELD







TOP — Complete 36" strip coating line installed at Reynolds Aluminum Supply Co. The line is completely automated — raw coil stock to coated and baked finish.
BOTTOM — Coater in the line at Reynolds evenly meters finish, saving paint and giving smooth baked coating.

UP TO 5,000 FEET PER HOUR—Cleaned, primed, coated and baked.

COATS EITHER OR BOTH SIDES at the same time with the same or different colors, or materials. Applies lubricants, preservatives, electrical coatings as well as decorative finishes.

MORE UNIFORM FINISHES—Metered finish is rolled evenly on the work. Film thickness is controlled to within one-tenth of one mil, for economy and uniform baking.

SAVES UP TO 50% on paints, enamels or other coating materials.
Application of tough elastic coatings permits forming after finishing.

NO HANDLING, other than of coiled stock. Continuous-type Gasway Rollacoaters perform every function from cleaning and treating to coating both sides, baking and recoiling all in a single pass. Some of the users of this equipment to speed up production and reduce cost are: *Reynolds Aluminum Supply—Lithostrip—Rollcoater, Inc.—American Nickeloid—Allweather Steel—Comaco—Hi-Ten.*

INFORMATION AVAILABLE at no obligation to you. Regardless of large production rates or intermittent manufacturing, there's a Gasway Rollacoater to fit your needs. *Send for the whole story.*

GASWAY CORPORATION
6463 North Ravenswood Ave.
Chicago 16, Illinois

LOOK TO GASWAY FOR EFFICIENT HIGH PRODUCTION COATING OF STRIP, SHEET OR PANELS

volume of Enthol 59 with up to nine volumes of water. It can be operated at temperatures up to 180° F. for more effective cleaning without excessive loss of solvent due to evaporation.

In many instances, Enthol 59 has stripped residual paint and enamel from parts being prepared for repainting. Laboratory tests conducted by Enthone, have demonstrated the product's ability to remove many types of smut and to convert dark, oily surfaces to a bright, clean condition.

For more data, circle 2 on colored card.

Sprays Rigid Urethane Foam

Custom-made by The DeVilbiss Co., Toledo, Ohio, the spray gun illustrated here is designed for applying rigid urethane foam.

This unusual gun makes it possible to spray rigid urethane foam on vertical or overhead surfaces without sagging. Thicknesses from 3/16-in. to as much as 2-in. can be built up in continuous operation. The material has great strength with light weight and excellent thermal and acoustical properties. It is also highly adhesive and will stick to metal, wood, masonry, glass and fabrics. It will not mold or mildew and does not attract insects, moths or vermin.

Sprays coatings of rigid urethane foam.

This makes possible the application of the new chemical foam as insulation over large areas or structural panels, with greater ease and at comparable cost to present types of insulation because of savings in labor time.

For more data, circle 3 on colored card.

New Split-Eyelet Connectors

Designed for paint and compressed air lines and for pressures up to 250-psi, Spraying Systems Split-Eyelet Connectors provide simplified mounting for spray nozzles of all types. Equipment such as gauges or hose may also be easily mounted to pipe lines with these new connectors. These connectors provide a secure, leak-proof mounting that cannot loosen or break.

For more information write for No. 7521 Split-Eyelet Connector Bulletin No. 93, to Spraying Systems Co., 3240 Randolph St., Bellwood, Ill.

For more data, circle 4 on colored card.

Bronzeless Gold Finishes

Bronzeless Golds cannot be distinguished from bronze finishes. They do not tarnish; they are hard and scuff resistant. Bronzeless Golds, being made from aluminum, do not separate or settle quickly in the hose or in the pressure tank.

The former problems with Bronzeless Gold have been overcome by

Production and Quality Up!

WITH **SLY** CONVECTIONEERED OVEN

With an increase in business, the Interior Steel Equipment Co. has augmented their paint baking facilities. In doing this they have achieved economies in handling of work while maintaining and even enhancing the quality of their products.

They installed a Sly Convectioneered Oven, 45′ long, 9′ 6″ wide, 6′ 9″ high with semi "A" type sheet metal hoods at the exit and entrance ends to form an efficient heat seal. Beneath the oven is a self-contained 2,500,000 BTU per hour direct gas-fired heating unit.

As aids in achieving excellent finishes on the products are: (1) efficient air distribution over the work (2) temperature uniformity in the baking zone (3) correct exhaust conditions to maintain proper oven atmosphere, and (4) a low overall temperature gradient between supply and recirculation temperatures.

This installation is typical of the careful engineering that goes with all Sly Industrial Ovens. *May we discuss your requirements with you?*

Designers and Manufacturers of: Dust Control Systems, Blast Cleaning Equipment, Tumbling Mills, Industrial Ovens.

THE W. W. SLY MANUFACTURING CO.

SINCE 1874

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OFFICES IN PRINCIPAL CITIES

combining two recent Bee Chemical Research Laboratories developments: 1) a new line of transparent colors with 2) a new vehicle.

Logo R-222 is the new coating vehicle that overcomes the problem of color uniformity and eliminates the need for more than average care in applying Bronzeless Golds. In addition it provides the leafing required to attain great brilliance. Combined with these features, Logo R-222 provides fast touch and through drying speed; Logo R-222 has excellent humidity resistance, grease resistance, hardness, and light stability.

The newly developed colorants produce yellow, medium and rose gold, copper, and many other shades that enhance the brilliance of the finish.

For more data, circle 5 on colored card.

New Spray Gun Mixes Epoxy and Catalyst Hardener

An entirely new concept in epoxy spray coating was featured by Bakelite Co. at the 1958 Paint Industries Show (Oct. 5-8 in Cleveland). The key to the new system is combining the epoxy resins and the hardener only an instant before the mixture is atomized and sprayed through use of a specially designed spray gun. The net result of the new technique is the curing speed of the epoxy coating formulation, which can be dictated by the requirements of the application rather than by the limitations of former methods of handling.

While the acceptance and use of epoxy coatings have grown tremendously over the past few years, they have been somewhat restricted by the basic problem of short pot life of fast curing catalyzed systems. Epoxy formulations that cured fast at room temperatures could only be handled in very small quantities and then only manually, resulting in the high labor costs. These have placed restrictions on the use of epoxies in a number of potential areas such as non-solvent coatings and reinforced plastics.

The equipment itself is based on rather simple principles. The resins and the hardner are fed to the spray gun in correct proportions, assured through a positive metering system. They meet in the gun's mixing chamber where they are mixed and forced

Demonstration spraying with the new gun.

through the orifice under pressure of 300-lbs. per square inch. Since the spray is created by the pressure of the liquids and not by compressed air, overspray and misting are sharply reduced, which, in turn, reduces toxicity hazards.

The gun is always ready for use, even after standing overnight, because of its unique self-cleaning design. When pressure on the trigger is released, a plunger forces the min-

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COAT FIRST

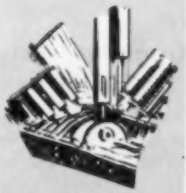
MACHINE AFTERWARDS

Dunal

THE MIRACLE METAL FINISH

Takes Boring, Grinding, Tooling, Lapping, Burring, Milling And *Will Not Chip, Crack, Mar or Peel!*

DUNAL Defies CORROSION • EXTREME TEMPERATURES — Heat, Cold; HIGH IMPACT, ALKALIS, ACIDS, SALT SPRAY, GREASE, HUMIDITY, MOISTURE, ETC.



CASE HISTORY: Needed — a coating that can be applied to a production casting before boring. A coating to withstand boring, machining, hot dip cleansing and degreasing. A finish that will take extreme pressure and temperature needed for press fitting of other units into the casting without cracking, chipping, marring or peeling.

Solution: DUNAL — the amazing metal finish that outlasts the lifetime of the product! DUNAL can be dipped or sprayed and then baked .... DUNAL also comes in colors.

FOR FULL INFORMATION WRITE, PHONE, WIRE

Look to Landau for direction

J. LANDAU & CO. Inc.

Manufacturers of Quality Industrial Finishes SINCE 1920

CARLSTADT NEW JERSEY

ute quantity of mixed resin through the orifice, leaving no material to harden and clog the gun.

The gun and metering equipment were designed and are manufactured by A. Gusmer, Inc., Woodbridge, New Jersey.

For more data, circle 6 on colored card.

Glass Frosting in Aerosol Can

A new, highly efficient glass frosting material is now available, packaged in a convenient aerosol spray can. Instantly applied, it does an excellent job of reducing sun glare. No color distortion is present. The Crown Glass Frosting allows light to pass without changing anything but its intensity.

An exclusive "fine mist" spray valve eliminates "runs" and speeds drying time.

The finished near-white color of Crown Glass Frosting blends pleasingly with any interior or exterior wall or building color.

For complete information, write Crown Industrial Products Co., Dept. IFI, 1004 Amsterdam St., Woodstock, Illinois.

For more data, circle 7 on colored card.

Kromotex, Polychrome Metallic Baking Enamel

Kromotex is a new polychrome metallic baking enamel that has the unusual feature of forming an attractive, uniform pattern without relying on skillful application techniques. It is not sensitive to loss of pattern because of overspray; it retains pattern uniformity over curved and rounded shapes and is not sensitive to normal variations in film thickness; it can be applied by hand spray or automatic spraying equipment and will bake at normal schedules for synthetic enamels.

Kromotex has a "porelain-like" appearance when applied in a heavy wet coat and it hides blemishes in the metal surface. The final baked enamel has a glossy, hard, mar-resistant finish and yet it is smooth enough to permit easy cleaning of the finished product. This product is offered by Standard-Toch Chemicals, Inc., 2600 Richmond Terrace, Staten Island 3, New York.

For more data, circle 8 on colored card.

New Alkyd Resin For Baked Enamels

Development of a new alkyd resin, designated as Glyptal ZA-114 solution, for use in formulating baking enamels requiring color and gloss retention at temperatures in the 400° F. range, is announced by the Chemical Materials Department of the General Electric Co. at Anaheim, California.

The new resin bridges the gap between the heat resistance of conventional saturated oil-modified alkyds and silicones in imparting superiority of overbake and gloss retention to alkyd-melamine baking enamels. Such formulations also have excellent hardness, flexibility and adhesion.

Combinations of ZA-114 with urea-formaldehyde or melamine-formaldehyde resins result in approximately twice the baked hardness of conventional saturated oil-modified, alkyd-amine resin blends, without any sacrifice in flexibility and adhesion. Overbaking can, in fact, lead to improvement in flexibility.

The properties of extreme baked hardness, combined with good adhesion, flexibility and excellent overbake color and gloss retention, suggest the use of Glyptal ZA-114 Alkyd Resin as a good vehicle for the formulation of appliance white enamels and white lighting fixture enamels which are subject to continuous,

EGYPTIAN "COMPOSITE BAKE"* METAL PRIMERS can double your oven capacity too!

*"Composite Bake" . . . the simultaneous baking of the Egyptian System of Metal Primers and Top Coat in one pass thru the oven.

Recently one of America's largest Manufacturers of Air Conditioning Equipment† found himself wrestling with the finishing room bug-a-boo that eventually plagues every volume product manufacturer . . . overtaxed oven facilities – resulting in non-productive finishing room man-hours.

At the suggestion of his Egyptian Finishes Specialist he momentarily laid aside the obvious solution . . . additional baking units – and made a trial run, switching to Egyptian "Composite Bake" Metal Primers.

Here's how the tally sheet read: (1)-Oven capacity doubled. (2)– Non-productive man-hours practically eliminated. (3)– No additional baking equipment required.

In addition to these production advantages, Egyptian "Composite Bake" Metal Primers brought these highly desirable finishing characteristics:

†*Name upon request.*

- **EXCELLENT ADHESION to practically any metal surface.**
- **WILL TAKE MOST ANY TOP COAT—Lacquer or Synthetic Enamel.**
- **SMOOTH FILM and excellent "Enamel-Holdout"**
- **GOOD RUST RESISTANCE—Corrosion Inhibiting Pigments.**
- **SUITABLE FOR EXTERIOR EXPOSURES.**

Listening to the complete Egyptian "Composite Bake" Story could point out the way to cut costs in your finishing room too. Invite an Egyptian Industrial Finishes Specialist to call on you TODAY, or write for detailed information. No obligation of course.

EGYPTIAN *Industrial Finishes*

The EGYPTIAN LACQUER MANUFACTURING COMPANY

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high-temperature service; automotive and steering wheel baking enamels; coatings for floor and wall furnace grills, and space heaters; clear baking coatings for brass hardware; enamels which are drawn or post-formed after baking; baking enamels for office machines; and other finishes which are subjected to severe wear or must withstand impacts.

For more data, circle 9 on colored card.

Device Tests Paint Film

A practical testing instrument that determines the various film properties in a manner that can be recorded in numerical values has been developed. It is called the Wynn Film Tester.

This machine rates cohesion, adhesion, mar and abrasive resistance, impact resistance, scrub resistance and cross-hatch test for brittleness. These factors are rated numerically by various specialized tools which are attached to the machine for each test.

Special panels are not required. The testing table is so constructed that run-of-the-mill laboratory panels, regardless of size or thickness, can be evaluated quickly. Tests that otherwise would require great skill, experience and judgment on the part of the operator can be made quickly and accurately on the Wynn Film Tester with results reproducible in any laboratory.

Tests film of paint material for adhesion, brittleness and all kinds of resistance.

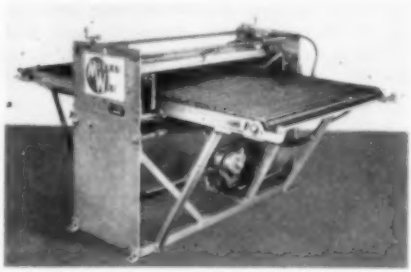
Further information is available from Forma Scientific, Inc., Box 543, Marietta, Ohio.

For more data, circle 10 on colored card.

Murray-Way Roller Coater

A new roller coater designed for line production is announced by Murray-Way Corp., of Birmingham, Michigan.

This Model C roller coater provides for the uniform application of draw compounds, waxes, sealers, rust inhibitors, paints and varnishes. One or both sides of continuous roll or sheet material can be coated with an accurate film thickness.



Can be synchronized with automated lines.

The conveyor is optional, and will be provided in any length desired. Flexing occurs only in the drive chain of this conveyor. It operates at variable speeds.

For more data, circle 11 on colored card.

Drum Cradles; Storage Racks

All welded, tubular frames and channel braces give Grizzly drum cradles modern styling and great strength. Cradles are available with or without casters, with or without drum rollers. When requested, cradles are available with two swivel and

THERE'S A BETTER WAY...**to protect your products!**

Come rain or shine, Glidden finishes provide real umbrella protection—against humidity, corrosion, chipping, fading, staining and all other enemies of product finishes.

Glidden finishes are custom-formulated to insure the special protection your particular products need. What's more, Glidden Technical Service is the most thorough and practical in the industry, including complete analyses of all finishing problems *in your plant* by experienced technicians.

You need both—Glidden Finishes plus Glidden Technical Service—for *real umbrella protection,* whatever your product, process or problem.

QUALITY Glidden PRODUCTS

FINISHES FOR EVERY PRODUCT

The Glidden Company
INDUSTRIAL PAINT DIVISION
900 Union Commerce Bldg., Cleveland 14, Ohio

"THE GLIDDEN UMBRELLA" of protection combines comprehensive technical service and custom-formulation of product finishes for all industry.

two rigid casters to enable easy and quick placement to exact location for instant use. Rollers are for revolving drums for mixing and draining alignment.

Cradle sizes are 30-in. long, 18½-in. wide with various heights from 19 to 27½-in.

Grizzly drum storage racks hold four to six drums in readily accessible positions, designed for loading ease from front or back.

For Grizzly equipment catalog, write Pucel Enterprises, Inc., 3746 Kelly Ave., Cleveland 14, Ohio.

For more data, circle 12 on colored card.

Clear Coating Metal Finish Resists Heat and Corrosion

A new clear coating protective finish that is completely thermosetting at temperatures up to 400° F. has been introduced by the Industrial Finishes Division of Enterprise Paint Mfg. Co., 2841 S. Ashland Ave., Chicago 8, Ill. The coating was developed for metals subjected to extreme heat or extensive corrosion.

Identified as No. 7927 Clear Coating, it is recommended by Enterprise as a heat resistant finish for mufflers and other metal objects where heat resistance is a vital factor, as a corrosion resistant lining for steel drums, pipe and chemical equipment, as a low friction, hard finish for heat sealing equipment and baking pans and for the coating of wire enamel. As a base for Teflon dispersion coatings on steel, the new 7927 Clear Coating provides adhesion and corrosion resistance.

The finish was originally developed for the coating of 20-mm. steel cartridge cases. Tests show that it is unaffected by the extreme heat generated by rapid firing. Shell casings treated with No. 7927 Clear Coating can take rapid ejection from red hot gun barrels without sticking. The coating also withstands the severe crimping onto the bullet.

Tests made with a wide range of severe chemicals and solvents prove the finish provides exceptional resistance to corrosive powders. In one test, a shell casing was subjected to 1000 hours of salt spray with no traces of corrosion evident at the conclusion of the test.

No. 7927 Clear Coating is a thermalized Epoxy baking coating of a clear gold color. It provides resistance to temperatures over 1000° F. for short periods of time.

The coating can be applied with fast, automatic spray equipment and baked in 15 seconds at 550° F., or in ten minutes at 400° F. The resulting finish is a high gloss, extremely hard surface with a low coefficient of friction and excellent flexibility.

For more data, circle 13 on colored card.

Heat Resistant Paper Tape

Two new Hi-Temperature flatback paper pressure-sensitive tapes are offered by Permacel, New Brunswick, N. J. The two tapes, Permacel EM 3979 Hi-Temp. Flatback Tape and Permacel EM 4082 Hi-Temp. Flexible Flatback Tape have a specially compounded rubber-resin white adhesive mass.

Both have excellent high heat and cold resistance, making them useful for holding and masking during baking operations.

Since both tapes are odor free they can be used in refrigerators, freezers, cold storage lockers and other enclosed areas. Another feature of these tapes is their stain resistant adhesive which permits application of the tapes on enamelled and lacquered surfaces without staining or discoloration.

For more data, circle 14 on colored card.

For Your Convenience

Use INDUSTRIAL FINISHING magazine's "Reader Service" return cards to obtain further information on products described and illustrated in the "Materials; Supplies; Equipment" section which procedes this page; also to receive further information on what manufacturers have to offer—literature, products, supplies, services, etc., as mentioned on the following pages.

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Industrial FINISHING

October, 1958, issue

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Some of the returned cards we receive are not filled in correctly—and we cannot read a few of the hand written names and addresses. Before returning a card, please check to see if it is marked correctly—and legibly, including your name and address. Thank you.—*Editor.*

"Radiant Heat—Applications Unlimited" is the name of a new 20-page illustrated booklet on infrared ovens. If you include data on your applications, we will gladly send recommendations, giving information on the best infrared applications for your particular use. The Fostoria Pressed Steel Corp., Dept. 521, Fostoria, Ohio.

For more data, circle 22 on colored card.

Complete Paint Finishing System, such as flow coating, dip coating or automatic spraying, metal cleaning and phosphatizing equipment, baking ovens, air replacement systems and conveyors can be engineered and installed by The Spra-Con Co., 3600 Elston Ave., Chicago 18, Ill. The Spra-Con catalog illustrates and describes many installations of complete paint finishing systems—small, medium and large.

For more data, circle 23 on colored card.

Nursery Furniture, Hampers, hospital furniture laboratory and office furniture, toys, containers of all types, when coated with "Sanitized", resist germs, bacteria, fungi, mildew, mold and odors. Sanco Paints by Monroe Sander Corp., Long Island City 1, N. Y., the licensees of industrial finishes formulated with bacteriostatic chemicals by Sanitized Sales Co. of America, Inc., New York 16, N. Y., can be applied by dip or spray and air-dried or baked.

For more data, circle 24 on colored card.

Spray Mask Painting Machines, spray mask washing machines, finishing equipment and custom units for special finishing, as well as spray masks, jigs and fixtures, are supplied by Thierica Studio, 900 Claney, N.E., Grand Rapids 5, Mich. Send part, print or sample, and special attention will be given to your particular masking or finishing problem. Special masks and special tooling can be designed for your product.

For more data, circle 25 on colored card.

Natural and Synthetic Pearl finishes in air dry or bake coatings for a variety of products, are offered by Rona Laboratories, Inc., E. 21st & E. 22nd St., Bayonne, New Jersey. Apply to metal, plastic, wood or glass surfaces.

For more data, circle 26 on colored card.

Paint and Enamel Stripper. Requires no heat, current or additives. Handling information and samples available on a full line of non-flammable, water-rinsable compounds effective in removing coating systems of primers, topcoats, air-dry or bake, from ferrous or non-ferrous surfaces. Allied Finishing Specialties Co., 2641 W. Grand Ave., Chicago 12, Illinois.

For more data, circle 27 on colored card.

Multicolor One-Coat Finish called "Spex" is featured by V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39, Ill. Provides a combination of two or more distinct contrast or harmonizing colors in one coat with standard spray equipment. For finishing wood, metal, plastic, brick, concrete and all types of composition board. Dries like lacquer. Available in a great number of attractive stock colors. Hides all surface irregularities. Color card available.

For more data, circle 28 on colored card.

Ransburg's No. 2 Process helps maintain high-quality standards. This process has been used effectively on electric food mixers, gasoline pumps, etc. Ransburg services, including the test painting of your products in its laboratories, are available to any manufacturer whose production justifies conveyorized painting Ransburg Electro-Coating Corp., Indianapolis 23, Ind.

For more data, circle 29 on colored card.

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OVENS — WASHERS — AIR HEATERS
— COMPLETE FINISHING SYSTEMS —
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DRYING SYSTEMS CO.
1825 FOSTER AVENUE CHICAGO 40, ILL.

LETTER FILL
1 2 3 4 5 6
DRY
or WET
Plastic or Metal
first or second surface
Bee Chemical Co., Chicago 33, Ill.

Acrylic, Alkyd, Vinyloid coatings for a wide range of special jobs, are offered by The Varnish Products Co., 5206 Harvard Ave., Cleveland 5, Ohio.

For more data, circle 30 on colored card.

Unichrome Coating 6400 gives a rich texture of morocco leather in a sprayed vinyl finish. Produces a flexible, chip-proof mar-resistant finish which withstands corosion. Metal & Thermit Corp., Rahway, New Jersey.

For more data, circle 31 on colored card.

Airless Spray Coating minimizes overspray problems, reduces health and fire-hazards, cuts maintenance and clean-up costs, saves paint, time and labor and reduces auxiliary painting equipment requirements. Above these advantages a better finished product is the final result. Write Nordson Corp., Amherst, Ohio, for the Airless Spray Painting brochure.

For more data, circle 32 on colored card.

New Color Styling reflects the quality of furniture. Lindeman Wood Finish has both. For new colors and finishes, inquire at Lindeman's studio and laboratory in Galax, Virginia, or write Lindeman Wood Finish Company, Inc., Indianapolis 2, Ind.

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Primer for 25 Metals, "Gripalloy" is available in black and colors; excellent adhesion . . . . and resistance to salt spray and solvents. Tenax Finishing Products Co., 390 Adams St., Newark 5, New Jersey.

For more data, circle 34 on colored card.

Complete Finishing Systems, including heat treating furnaces, ovens for drying or baking finishes, etc., can be engineered for your particular plant and products by Despatch Oven Co., Dept. 43A, 619 S. E. 8th St., Minneapolis 14, Minn. Bulletin 51E gives modern ways to achieve better finishes, faster production and smoother metal products handling.

For more data, circle 35 on colored card.

Instant Stripper—For metal or wood finishes. A non-flammable, non-toxic stripper which removes almost instantly, most finishes—enamels, either lacquer or synthetic (baked or air-dried), paints, varnishes, etc. V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39.

For more data, circle 36 on colored card.

Wood Grain Printing machines (vertical roller) print custom design graining patterns on assembled or partly assembled TV cabinets, furniture, etc. Cylinders and other supplies furnished. Shelton Graining Supplies, Inc., 553 E. Walnut St., Pasadena, Calif.

For more data, circle 37 on colored card.

Perfex Satin Finishes, the original "flat" made by a new and different process, without the use of stearates or other flattening agents, have cut the dust-free time, increased print resistence, increased body and build, improved clarity and color . . . all of which combines to produce a wonderful rubbed finish effect appearance and a pleasant waxed effect feel. Available in a full range of sheens to produce the exact rubbed effect and waxed feel desired. Perfectioon Paint & Color Co., Indianapolis 2, Indiana.

For more data, circle 38 on colored card.

Agateen Clears assure beauty, quality, good appearance and protection. Investigate Agateen clear lacquers, air dry and semi-bake lacquer enamels and baking lacquers. Agate Lacquer Mfg. Co., Inc., Long Island City, New York.
For more data, circle 39 on colored card.

Satin Finish Wooling Lacquers are ideal for use where a satin sheen finish with a smooth, silky feel is desired, without requiring a costly rubbing operation. Available in water white or in regular satin sheen wooling lacquer. Made by The Lawrence-McFadden Co., 7430 State Rd., Philadelphia 36, Penna.
For more data, circle 40 on colored card.

Paint Testing Instruments and equipment are illustrated and described in a new 1958 catalog. Write Gardner Laboratory, Inc., P. O. Box 5728-1, Bethesda 14, Md.
For more data, circle 41 on colored card.

Ideal Tack Rags are used prior to painting, to wipe off and hold dust, dirt, sand particles and lint too small to see, but which might leave a blemish or defect on the final coat of paint or finish. Ideal Chemical Co., 1499 Dean Drive, South Euclid 21, Ohio.
For more data, circle 42 on colored card.

Lacquers, NGR Stains, and everything used for finishing fine furniture, cabinets, pianos, etc., plus styling and technical service—in Southeast U. S. A. Snyder Brothers Co., P. O. Box 631, Toccoa, Ga.
For more data, circle 43 on colored card.

Restore Paint to its original consistency without opening the container, whether in ¼-pint cans or in 55-gallon drums. Time required is only 2-minutes per gallon. Full information from Miracle Paint Rejuvenator Co., 128 E. 10th St., St. Paul.
For more data, circle 44 on colored card.

Turcoat Phosphating Analysis Kit is now available to help you determine how your products are adaptable to phosphating and to the many paint adhesion advantages it offers. Turco processes in use range from small 3-tank setups to elaborate 11-stage spray washing systems. A Turco engineer can give you an on-the-job survey to determine your best method of securing good paint adhesion and corrosion resistance. Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, Calif.
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THE PRILLAMAN CO.
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Push-Button Touch-Up. With the Sprayon Self-Spraying Touch-Up Tool, any employee can quickly repair the paint damage where it happens—on the production line, inspection, shipping, warehouse, etc. Free touch-up folder available. Sprayon Products, Inc., 2071 East 65th Street, Cleveland 3, Ohio.

For more data, circle 46 on colored card.

Conveyorized Ovens can be engineered for your particular drying and baking operation problems, by The Lanly Co., 2800 Euclid Ave., Cleveland 15, Ohio. Catalog No. 560 will get you better acquainted with the Lanly organization.

For more data, circle 47 on colored card.

Paint Strainers for straining lacquers, enamels, paints or varnishes. Made of heavy paper stock with cloth inserts in coarse, medium, fine and extra fine mesh, 6-in. in diameter. Louis M. Gerson Co., Box 175A, Mattapan, Mass.

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Paint Overspray can be reprocessed in our plant to conform to its original specification in both physical and chemical properties. Paint waste overspray or paint sludge can be used again in regular production at considerable savings. Mixed color sludges can be converted to primers. Write for complete details. W. C. Richards Co., 3108 W. Vermont St., Blue Island, Illinois.

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"Letter Fill" for filling recessed letters, symbols and numerals with paint on plastic or metal surfaces. A bulletin describes problems involved with using coatings and dry wipes on second surface clear plastics, as well as machine applications and different types of masks that can be used. Logo Division, Bee Chemical Co., 12933 S. Stony Island Ave., Chicago 33, Illinois.

For more data, circle 50 on colored card.

Laboratory Experts are available to help you solve your finishing problems. Finishes for aircraft, composition products, office equipment, plastics and wood or metal products can be formulated and developed for your particular needs or product. Randolph's skilled technicians can help you solve any difficult finishing problems. Randolph Products Co., Carlstadt, New Jersey.

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Exposure Test. Actual weathering, corrosion and sunlight tests, direct and under glass for quick predetermination of durability and permanency in southern Florida by South Florida Test Service, Inc., 4301 N.W. 7th St., Miami 34, Florida.

For more data, circle 52 on colored card.

Silk Screen in silk, nylon or metal cloth and silk screen weatherproof enamel are available from The Naz-Dar Co., 461 Milwaukee Ave., Chicago 10, Ill., for use on nameplates, toys, dials, ash trays, printed circuitry, etc. Screen and ink information available by writing Dept. P-6.

For more data, circle 53 on colored card.

Dupor No. 4 Respirator has double filters for easy breathing and greatest filtration of paint spray, dust and fumes. Soft rubber face mask gives an airtight fit. Patented Dupor valves bring in clean air and throw off breathed air. Weighs only 4-oz. H. S. Cover, P. O. Box 2508, South Bend 14, Indiana.

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Wood Grain Reproduction, New sturdy high quality machines for exacting grain reproduction—some practically automatic in operation—are offered by Schmutz Mfg. Co., 1600 W. Main St., Louisville 3, Ky.

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Structural Steel Paints, shelving and machinery enamels, vinyl plastisols and organosols, furnituree finishes, aluminums and implement enamels are only a few of the many products available from Adelphi Paint & Color Works, Inc., 86-00 Dumont Ave., Ozone Park 17, N. Y. Get details on Adelphi's "Satisfactory Guaranteed" plan.

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Burn-in Tools and knives for making quick and skilful repairs to nicked, dented or scratched finishes. Made of hardened tool steel especially selected for the purpose. The Op-Al Electric & Mfg. Co., 3135 Martindale Ave., Indianapolis 5, Ind.

For more data, circle 58 on colored card.

"Cres-Lite" Bronze Powders for spraying, dipping or flow coating give a plated effect like a pure metallic bronze powder. A full range of 33 colors are in stock, or colors can be matched to suit your particular needs. New colors and shades of metallic finishes can be created in our Design Department. New color card showing our "in-stock" bronze powders is free upon request. Crescent Bronze Powder Co., 118 W. Illinois St., Chicago 10, Ill.

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Screen Process Catalog. Everything used in connection with screen process work—materials, supplies, tools, equipment—is listed, illustrated and described in a new 120-page book distributed by Advance Process Supply Co., Inc., 1442 W. Kinzie St., Chicago 22, Ill. An alphabetical index of contents appears on the last page.

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Roller Coaters can boost your protection, reduce down-time, cut coating costs. These heavy-duty machines are ruggedly and rigidly built to maintain high quality production. Apply paints, sealers, waxes, etc., to flat work such as wood, metal, plywood, plastic, etc. Literature available describing equipment with optional features to meet your finishing needs. The Black Brothers Co., Inc., Mendota 1, Ill.

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Metal Strip Prefinished by Gasway rollacoaters provides a smooth metered coating, high speed production and no wasted material. Up to 5,000-ft. per hour can be cleaned, primed, coated and baked. Either or both sides can be coated with a metered finish rolled evenly on the work. Film thickness is controlled to within one-tenth of one-mil. Saves up to 50% on paints and provides a tough elastic coating that permits forming after finishing. More information available from Gasway Corp., 6463 N. Ravenswood Ave., Chicago 16, Ill.

For more data, circle 63 on colored card.

Automatic Viscosity Control for spraying, flow coating and dipping improves quality of painting and finishing by providing continuous uniformity of paint material. Norcross Corp., 247 Newtonville Ave., Newton 58, Mass.

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Metal Parts Washers for washing, phosphating, pickling, degreasing, etc., are used in many large industrial plants for quick and thorough cleaning of both parts and products. Ultrasonic equipment from 50 watts up is also available. Write Ramco Equipment Corp., 821 Edgewater Road, New York 59, N. Y.

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Graining Plates of any pattern, size or shape (wood grain, leather, marble, fabric, etc.) for hand or machine graining. American Richwood Products Co., 104 E. Mason St., Milwaukee 2, Wis.

For more data, circle 66 on colored card.

"Duracron" Thermo-Setting Acrylic Enamel combines in a single finish, superior adhesion, color and gloss retention, durability, flexibility and resistance to chemicals, grease, humidity, moisture, salt spray, stains and impact. Can be sprayed, dipped or roller coated. Excellent as a one-coat enamel or as a topcoat with various primers. Pittsburgh Plate Glass Co., Industrial Finishes Divn., 1 Gateway Center, Pittsburgh 22, Penna.

For more data, circle 67 on colored card.

Portable Sanders—electric or air driven, by the National-Detroit Inc., Rockford, Illinois, can be used on wood, metal, plastic, felt, stone and other surfaces. Straight line or orbital action. National sanders produce that smooth surface so essential to a fine finish.

For more data, circle 68 on colored card.

Mearlmaid Pearl Essence or Nacromer applied to your product may provide the sales appeal you have been looking for. For 25 years the Mearl Corp., 124 E. 40th St., New York 16, N. Y., has pioneered the use of these pigments. Pearl essence pigments can be used on wood or metal furniture, plastic upholstery fabrics, decorative papers, jewelry, lighting fixtures.

For more data, circle 69 on colored card.

"driQuick" Interlocking Sections for building your own controlled-temperature infrared ovens. Have no sockets to burn out, has more intense far infrared energy with less power consumption. Impervious to vibration, shock, vapor and moisture. Dry Clime Lamp Corp., driQuick Division, Greensburg, Indiana.

For more data, circle 70 on colored card.

Non-dripping Lubricants for conveyors and other moving parts, made by Dow Corning Corp., Midland, Michigan. These are silicone greases that won't melt or drip at 450° F. Silicone lubricants withstand continuous high temperatures and corrosive fumes without oxidizing, decomposing, gumming. There's no dripping on newly finished parts. Ideal lubricants for conveyor bearings, cams, gears, valves, other moving parts. Free booklet on request.

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"Dustix" Tack Rags are glassine bagged or bulk packed, are long-lasting and spontaneous combustion-proof. Help assure a perfect finish by using "Dustix" tack rags on your product. Modern 1st Aid Mfg. Co., Industrial Divn., 737-A W. Randolph St., Chicago 6, Ill.

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"Remkleen WS" is a clear fluid that degreases like magic. Requires no water, heat, steam or power and no expensive equipment. Simply rinse, spray or dip the work in Remkleen WS and it produces a chemically clean surface for immediate painting, coating or processing. 5-gallon can at drum price. R. & E. Martin, Dept. J-O, 2817-21 Helen St., Philadelphia 34, Pennsylvania.

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"Newco" No. 1 Fine Polishing and Rubbing Compound is excellent for rubbing all lacquer, varnish and synthetic surfaces. If you do wheel polishing, Newco No. 1 can save you money and give you a better finish. Newcomb Products Co., 3802 Payne Ave., Cleveland 14, Ohio.

For more data, circle 74 on colored card.

"Mogul M-55" Liquid Treatment for water-wash paint spray booths is safe to use, will not harm personnel. Provides an excellent paint blanket and protects equipment. Keeps your water circulation system at top operating efficiency. 60-day trial offer will prove Mogul M-55 results in your operations. The North American Mogul Products Co., Standard Building, Cleveland 13, Ohio.

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Tack Cloth for Wiping Dust. It's available in different meshes, in envelopes, rolls or bulk. Lint free, wax free; no danger of spontaneous combustion. Bond Chemical Products Co., 2641 N. Clybourn Ave., Chicago 14, Ill.

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Cable Conveyor Components provide the sharp turns and short dips you need to efficiently make every foot of floor space pay off. Bush-Lock Cable Conveyors are custom-built on the spot from the Buschman package of standard stock components. Buschman specialists will cooperate with washer or oven manufacturers in making a survey of your plant. The E. W. Buschman Co., 4438 Clifton Ave., Cincinnati 32, Ohio.

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Drawer-Glide Waxes, color or colorless, penetrate deep into pores of the wood thereby giving the drawers dimensional stability, a moisture-proof coating and lubricating the surfaces for easy sliding. Drawer Glide Waxes also beautify the wood and give surfaces a smooth, waxy feel. The Prillaman Co., P. O. Box 1024, Martinsville, Virginia.

For more data, circle 78 on colored card.

"Modern Vapor Degreasing" is the title of a new 24-page brochure published by The Dow Chemical Co., Chemicals Sales Dept. 761H-1, Midland, Michigan, and gives complete information on Dow's numerous chemicals basic to the metalworking industry, such as Perchloroethylene, Trichloroethylene (for cleaning missile hardware), Chlorothene, Sodium Orthosilicate, Dowicide A, Methylene Chloride, etc. Let us help you solvve your particular metalworking problem.

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Pre-Cut Masks speed finishing. Protect surfaces from finishing to inspection. Hundreds of shapes and sizes of masks in stock or one can be made to fit your particular needs. For use in spraying, baking and tumbling. Free samples and bulletin 160-C available from W. H. Brady Co., 733 W. Glendale Ave., Milwaukee 9, Wisconsin.

For more data, circle 80 on colored card.

Drum Upender No. 32 for upending heavy drums, takes the strain and effort out of handling drums of paint, etc. Sizes and shape of upender spreads lifting pressure over large area to prevent drum damage. Morse Mfg. Co., Inc., 763 W. Manlius St., East Syracuse, N. Y.

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"Composite Bake" Metal Primers provide excellent adhesion to practically any metal surface; will take most any top coat, synthetic enamel or lacquer; provide a smooth film and excellent enamel holdout; has good rust resistance, and is suitable for exterior exposures. Detailed information without obligation. The Egyptian Lacquer Mfg. Co., Box 444, Newark 1, New Jersey.

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"Magic Tack Rags" are scientifically made to create the "tack" that picks up dirt, sand, and foreign matter on the surface to be finished. Will not dry hard—but retains "tack" indefinitely. Wm. Juergens Mfg. Co., P. O. Box 143, Station C, Toledo, Ohio.

For more data, circle 83 on colored card.

Graining and/or Roller Coating: flat and curved surfaces, edges, etc., with or without steady belt feed. Small and large machines. Kent Rotary Equipment Co., 257 S. Spring St., Los Angeles 12, Calif.
For more data, circle 84 on colored card.

Teflon Finishes are water-repellent. Liquids drain completely from surfaces coated with Teflon. Has outstanding electrical properties, and can stand change in temperature from 390° below zero to 480° above. Excellent for coating transformers, paint mixers, spark plugs and interior of piping; also production-line machinery. Most solids will not adhere to Teflon-coated surfaces, therefore no shutdowns for cleaning machinery are necessary. E. I. duPont deNemours & Co., Inc., Finishes Divn., Wilmington 98, Dela.
For more data, circle 85 on colored card.

Industrial Ovens, each with its own direct gas-fired air heater and its own temperature and safety control system, are used to cure the plastic coating of transformers. Ovens designed for any type of finish and size of product. Ask for Bulletin 200, and let's discuss your problem. The W. W. Sly Mfg. Co., 4804 Train Ave., Cleveland 1, Ohio.
For more data, circle 86 on colored card.

One Paint Formulation replaced three others. Formerly three separate paint formulations were necessary to produce the silver green finish used by a manufacturer of electric engines, generators and koolers. "The Man from Minnestota" was consulted, a one-formulation finish that met all requirements was produced. Let a Minnesota paint technician formulate a paint for your particular product. Minnesota Paints, Inc., 1101 3rd St. South, Minneapolis 15, Minn.
For more data, circle 87 on colored card.

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Sunstop Lacquer is a new colorless lacquer that stays colorless. Based on half-second butyrate, this crystal clear lacquer is tough, strong and durable. Resists discoloration and stain damage from water, alcohol, detergents, rubber, ultravoilet light and sunlight. Sunstop formulations for both wood or metal. Complete details or a demonstration can be had by writing The Gilbert Spruance Co., Philadelphia 34, Penna.
For more data, circle 88 on colored card.

Half-Second Butyrate lacquers give outdoor aluminum maximum protection. Is clear, non-yellowing, weather-resistant. This tough finish will protect the surface for long periods and the action of rain alone will remove the accumulation of most dirt and grime. Easy to apply, economical to use, excellent protection in one coat. Eastman Chemical Products, Inc., 260 Madison Ave., New York 16.
For more data, circle 89 on colored card.

A complete finishing system for metal preparation, metal priming and enameling, boosted phosphatizing, priming and painting production by 200%. Binks extensive finishing experience and equipment can be of benefit to you. Spray guns, spray booths, ovens, etc., to fit into your particular production line are available from Binks Mfg. Co., 3116-40 Carroll Ave., Chicago 12, Illinois.
For more data, circle 90 on colored card.

"Hammercote" finish provides a uniform pattern and a mar-proof surface with a high-lustre. Can be sprayed easily. The final baked finish gives the appearance that an extra coat of clear has been added, and gives a smooth and uniform pattern at all times. Tousey Varnish Co., 520 West 25th St., Chicago 16, Illinois.
For more data, circle 91 on colored card.

Beautiful Wood Grain Finish. Roto graining machines simulate the finest true fidelity reproduction of beautiful wood grains on even the most inexpensivee low cost woods, composition boards, metal or paper. Print on completely assembled units or prefabricated parts . . . . grains on flat, round or curved surfaces. The newest addition to the Roto Finishing line is its 52-in. horizontal wood graining-finishing machine with revolutionary conveyorized feed and varnish roller-coating attachment. Roto Finishing Systems, 1501 S. Alameda St., Compton, Calif.
For more data, circle 92 on colored card.

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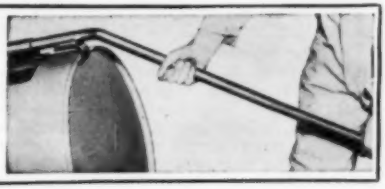

Frustrating Finishes Analyzed. If your finish seems to leave your customers "cold", our laboratories, our research skills and our production Know-how, can recommend a new creative coating for your product. A request on your letterhead may solve your vexing obstacles. United Lacquer Mfg. Corp., Linden, N. J.

For more data, circle 93 on colored card.

"Pearl Glo" Synthetic Pearl Pigment can be sprayed or dipped on any sealed surface of plastic, metal, wood, leather, paper, etc. Can also be incorporated into acrylics, polyester, vinyl, etc. Gives a pearl finish at very low cost. Sample available. Specify application and choice of vehicle. Argenta Products Co., Garnerville, N. Y.

For more data, circle 94 on colored card.

"Vitrilan LC" is an organic baking enamel for appliances and metal products. Gives beauty, durability, hardness, toughness, resistance to abrasion, corrosion, alkalies. Has excellent color and color retention. Can be applied by spraying, dipping or flow coating. Bakes at conventional schedules. Interchemical Corp., Finishes Divn., 224 McWhorter St., Newark 5, N. J.

For more data, circle 95 on colored card.

Rustripper can be used for dozens of difficult steel-cleaning jobs. Combines pickling and alkaline cleaning into one operation. 14-page illusrated booklet entitled, "Here's the Best Shortcut in the Field of Electroplating" is available from Oakite Products, Inc., 20 Rector St., New York 6, N. Y.

For more data, circle 96 on colored card.

"Toulon" is a high fashion finish with highlights that gives a warm dignity to cherry. Guardsman finish and Guardsman cleaning polish are also available to give an attractive finish to all types of furniture. Grand Rapids Varnish Corp., Grand Rapids 2, Michigan.

For more data, circle 97 on colored card.

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"MAGIC" TACK RAGS remove specks, lint, and sand particles on the surface of metal, wood or material to be finished. "MAGIC" TACK RAGS remain tacky indefinitely, and are spontaneous combustion proof. Sample upon request.

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Custom Industrial Finishes can be created in our laboratories for your particular products. Stains, fillers, glazes, lacquers, enamels and synthetics can be developed to add a distinctive touch to your products and revolutionize your sales patterns within a few months. Wolverine Finishes Corp., 836-50 Chicago Drive, S.W., Grand Rapids 9, Mich.

For more data, circle 99 on colored card.

Hammer, Crackle, Gold, and many other special finishes for metal, plastic and wood; protective and decorative to highest degree. G. J. Nikolas & Co., Inc., 2850 Washington Blvd., Bellwood, Ill.

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Hot Spray Systems cut material costs and reduce spray-booth maintenance. The hot spray system is foolproof, adapts to multiple gun hook-ups. Hot water from master heater heats paint in exchangers; heat-jacketed hose assemblies keep paint hot right up to the guns, assuring uniform viscosity at all times at each gun. A DeVilbiss engineer can plan a hot spray system for your particular product. The DeVilbiss Co., Toledo 1, Ohio.

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Napry Red Primer is just one of the many Industrial Finishes formulated by The Lowe Prothers Co., Dayton 2, Ohio, that can help reduce your painting costs. Lowe Bros. Industrial Finishes are style-tested paints for your particular needs. A Lowe Bros. finishing engineer can make a "flow-chart" analysis of your finishing system without obligation.

For more data, circle 102 on colored card.

BFC Chromic Acid (flake) is now available from Better Finishes & Coatings, Inc., 268 Doremus Ave., Newark 5, N. J. Every batch is checked, and every can filled with a full weight of extra-high quality Chromic Acid. Prompt delivery, from ample factory and nearby distributor stocks.

For more data, circle 103 on colored card.

Weather-Proof Finish. The Kadmoid finish, for example, is used on tire rims which are often stored and always used outside, exposed to all kinds of weather. An Akron company proudly calls it their Bond-a-Coat finish. Universal Paint & Varnish, Inc., Bedford, Ohio.

For more data, circle 104 on colored card.

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Titanox Titanium Dioxide White Pigments, formulated into your finishes, help-maintain color, gloss, opacity and durability both indoors and outdoors. Titanox pigments are adaptable to any type of mixing and grinding program. Titanium Pigment Corp., 111 Broadway, New York 6, New York.

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To insure greater paint durability have the right metal treating process to tie in a good product design with good paint finish. The use of "Prep Products" for metal conditioning, rust removing and for phosphatizing, will give your metal products an attractive appearance. Get a complete "package" for cleaning, etc., along with technical know-how. Neilson Chemical Co., 2306 Gainsboro, Detroit 20 (Ferndale), Michigan.

For more data, circle 107 on colored card.

"Good Lines" of top-quality industrial finishes that are ideal for showing off your products to best advantage, along with our experienced plant and laboratory team, make sure that your products look right and work right. Rockford Varnish Co., Rockford, Illinois.

For more data, circle 108 on colored card.

Uniform Viscosity and color is what you get at every spray outlet with a paint circulating system that is custom engineered for your particular plant and product being manufactured. Graco systems mean reduced handling of paint, savings in time and labor and improved plant housekeeping. Information on these "Direct-From-Drum" Air Powered Pumps is available from Gray Co., Inc., 103 Graco Square, Minneapolis 13, Minn.

For more data, circle 109 on colored card.

Toys to trucks, made of metal, wood, rubber and plastic, have beauty and durability when finished with O'Brien Industrial Finishes. A finish for your specific product can be formulated. Write The O'Brien Corp., South Bend 21, Indiana.

For more data, circle 110 on colored card.

Wyandotte Industrial Service Representatives are highly specialized in all phases of metal cleaning and finishing. These representatives take advantage of product know-how and chemical research at their fingertips. Let a Wyandotte representative help you with your metal cleaning problems. Get better results at lower cost. Wyandotte Chemical Corp., Wyandotte, Mich.

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"The Glidden Umbrella" of protection combines comprehensive technical service and custom-formulation of product finishes for all industry. Rain or shine Glidden finishes provide real umbrella protection against humidity, corrosion, chipping, fading, and all other enemies of product finishes. Get a complete analyses of all finishing problems in your plant by contacting the Glidden technician. The Glidden Co., Industrial Paint Divn., 900 Union Commerce Bldg., Cleveland 14, Ohio.

For more data, circle 112 on colored card.

Airless Spray is now used World Wide. Almost every type of paint is now being successfully sprayed with Airless Spray. Machinery, automobiles, furniture, appliances, farm equipment, are just a few of the many products being coated by Airless Spray. "Paint the Product, Not the Booth . . . . With Airless". Complete information available from Bede International Development Co., 14237 Detroit Ave., Cleveland 7, Ohio.

For more data, circle 113 on colored card.

"Dunal", the new metal finish is applied to the product first, then machining can be done, such as grinding, tooling, burring, etc. "Dunal" will not chip or crack, mar or peel. Can be dipped or sprayed, then baked. Comes in colors. Is resistant to corrosion, extreme temperatures, high impact, alkalis, salt spray, moisture, etc. J. Landau & Co., Inc., Carlstadt, New Jersey.

For more data, circle 114 on colored card.

Flexibility of the DeBurgh finishing systems makes it easy to alter your existing layout to meet future production planning. Conveyors can be added easily to enlarge or improve the capacity of any finishing operation. A Koch specialist will help you extend your production lines to meet your special requirements. Let him make a free layout of your plant. George Koch Sons, Inc., Evansville 4, Ind.

For more data, circle 115 on colored card.

"Multi-Color" Centrifugal Type Electrostatic Spray Systems are now offered by Ionic Electrostatic Corporation, Garfield, New Jersey. Various smooth multicolor finishes can be produced without special coating materials with the use of this new Model M-50 Ionic Electrostatic Spray Process. An array of airless variable speed centrifugal atomizers is utilized for blending the solid single color materials to produce multi-color effects. Full details are available from the maker. Free demonstrations can be arranged.

For more data, circle 116 on colored card.

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There may be certain firms or individuals to whom you do not want your reply sent. Simply address your communication to the box number in the ad and attach a separate list of names. Place both in a separate envelope addressed to Industrial Finishing Magazine, 1142 N. Meridian St., Indianapolis 4, Ind. If the advertiser is on the list you submit we will then destroy your letter. Names of advertisers using box numbers not revealed.

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Midwest manufacturer of Industrial Wood Finishes wants man with good eye on color matching. Should have chemical or practical experience in wood finishing. Address IF-610, care Industrial Finishing.

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Major manufacturer of complete finishing systems has areas open for men with knowledge of washers, ovens, flow-coat machines, dip tanks, conveyors and air make-up systems. Should now call on inside men at industrial fabricating plants. New England, Eastern and Western New York, New Jersey and Wisconsin, and other areas open. SPRA-CON COMPANY, 3600 Elston Ave., Chicago 18.

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If you want real security—

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Due to our expansion program, we have several excellent opportunities available for thoroughly experienced paint salesmen now calling on the trade. Exclusive territories, full laboratory and sales cooperation, prompt sample matching and competitive quotations are only part of the overall benefits enjoyed by Adelphi representatives. See our ad on page 110. All replies confidential. Phone or write Mr. H. Hirschkorn, Special Assistant to the President, VIrginia 5-6600. ADELPHI PAINT & COLOR WORKS, INC., 86-00 Dumont Ave., Ozone Park 17, N. Y.

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If your present line does not include varnish, you are missing a bet. PERFEX VARNISHES are unexcelled (yes unequaled) and are well known by volume finish users. Look at our display advertisement on page 35 of this magazine. If you are interested in the possibility of taking on PERFEX VARNISH in addition to your present line, write us. All replies will be held in strict confidence. PERFECTION PAINT & COLOR CO.

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